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VOLUME 15 NUMBER 2

FEBRUARY 1949

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CONTENTS

| | PAGE |
|--|---|
| SAMARITANA | Angel de Moya, APSA Cover |
| BOOK REVIEWS | 106 |
| CAMERA CLUBS | H. J. Johnson 118 |
| COLOR DIVISION | Rev. Herman Bielenberg 118 |
| MOTION PICTURES | |
| PHOTOMETRIC CALIBRATION OF LENSES | M. G. Townsend 139 |
| NATURE DIVISION | Louise Broman Janson 120 |
| PHOTO-JOURNALISM | Cliff Edom 119 |
| PICTORIAL | |
| EXPRESSION OF AN IMPRESSION | D. Kingsbury 101 |
| SAVING THE PSA LIGHT BOX | H. Lou Gibson 107 |
| THE FOLIO | Sewell P. Wright 111 |
| PSA | |
| IN MEMORIAM | 99 |
| PSA HONORS COMMITTEE | P. H. Orfman 108 |
| TERRITORIAL COLUMNS | 121 |
| NEWS AND NOTES | 124 |
| TECHNICAL | |
| TECHLOCALITIES | Vera Wilson 129 |
| RAPID PROCESSING OF FILMS AND PAPERS | J. I. Crabtree 130 |
| DEVELOPMENT BY RESORCINOL | T. H. James and G. I. P. Levenson 136 |
| SHARPNESS OF PHOTOGRAPHS | Edward K. Kaprelian 137 |
| PHOTOMETRIC CALIBRATION OF LENSES | M. G. Townsend 139 |
| WHAT'S NEW | Jacob Deschin 98 |

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NOMINATIONS . . .

PSA MEMBERS this year elect five national officers and three members of the Board of Directors. Selection of candidates is the joint work of the members and of the Nominating Committee. The word "joint" is used advisedly. No Nominating Committee is divinely inspired. It may develop no little perspiration in its work, but it draws its inspiration from members.

SEVERAL avenues of approach are available in expressing ideas regarding candidates for office. Members may make recommendations to their District Representatives. They may write directly to the chairman of PSA Nominating Committee, R. Erle Buckley, 156 West 15th St., New York 11, N. Y. They may nominate by petition.

IN THESE days when democracy is so pertinent a subject, one point sometimes is overlooked. Democracy is not just an idea. Democracy is action. Unless the democratic peoples work at democracy, democracy certainly cannot work for them. Dictatorships and totalitarian ideologies start, and find fertile field for growth, in the inertia of people. Busy with their own affairs, people say: "Let George do it!" So George does it, inviting Adolph and Joe to help him. After that, they are no longer bothered by democracy.

CHANCES are that PSA faces no serious danger of dictatorship. Its offices offer too little remuneration, too much responsibility. They are not exactly plums, sweet for the picking. Closer they are to sour fruit, healthy, but prolific of work and worry.

STILL, PSA national offices challenge men and women who find, in working for photography and their fellows, certain satisfactions unrelated to financial recompense. Every PSA office, every seat on the Board, is an opportunity for PSA members of vision, ability, and purpose. Those who know them should nominate them—right now!—V.H.S.

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60M-55

WHAT'S NEW

By JACOB DISCHIN, APSA

First place in the month's batch of news goes to the fastest telephoto lens ever made available for amateur 8mm movie cameras, namely, the Ciné Balostar 1/1.3, which has a focal length of 1 1/2 inches. The announcement was made about press-time by Dr. F. G. Back, its inventor, who also designed the sensational Zoomar lens, which made movie history some time ago.

The lens may be adapted to almost all 8mm cameras, perhaps *all* by the time this appears, and the price is \$187.

The lens's second claim to the limelight this month lies in the fact that this is the first amateur movie lens for the general market that uses the new system of T-stop measurements. This is the designation of lens-stop values by the amount of light transmitted through the lens instead of by mathematical measurement of the lens aperture diameter. You will remember that Bell & Howell's 35mm Focin camera was the first still camera to introduce T-stops. In Dr. Back's lens, however, the F nomenclature is retained for the sake of simplification.

The new lens also tops the speed of the fastest normal focal length (1 1/2 inch) 8mm lens to date, which is 1/1.3, or about 75

per cent slower than the Ciné Balostar 1/1.3.

The combination of extra speed and close-ups at a distance from the subject (about five times that permitted for the normal 1/2-inch lens in obtaining the same-size image) suggests a whole new field of candid movie-making in which the photographer can work unobtrusively under whatever lighting happens to be present. Under such circumstances, he will be able to operate the camera from the hand and thereby gain unusual freedom of movement.

The opportunities open to users of the new lens, which permits close-up movie-making under difficult lighting conditions at camera distances of 50 to 100 feet from the subject, were demonstrated at a preview in the offices of the Zoomar Corporation, 361 Fourth Avenue, New York, makers of the lens. Movies made by the normal lighting of various indoor events, ranging from domestic incidents illuminated by ordinary house lights, to roller-skating races and Times Square at night, suggested the lens' wide usefulness.

All the pictures were exposed hand held at the regular operating speed of 16 frames per second, and with the lens fully open.

The preview show included pictures made in black and white of two persons in conversation by the light of two 15-watt fluorescent tubes; films made at home under 200 watts of ordinary incandescent bulb lighting in lamps eight feet from the subject. Especially noteworthy were color

movies of a roller-skating derby which were shot from the first row of the balcony, a distance of about 100 feet from the action. Despite the poor lighting for photographic purposes, the films in the main were satisfactory both in depicting shadow detail adequately and in color values.

The Ciné Balostar 1/1.3 was announced by Dr. Back as "one of a family of ultra speed lenses," based on a new design in which the makers have achieved brilliance, detail and picture contrast, with good sharpness from edge to edge of the film frame. All of the lenses are fluoride coated for extra speed and sharper image detail.

Jen Dips Again

The way PSAer Myron C. Jenner figures it, one good dip deserves another. After his Jen-Dip for turning clear flash lamps into blue ones had climbed from the status of a stunt to that of an accepted routine, Myron cast about for more worlds to conquer.

Which brings us to the newest thing out of Jen-Products, 419 West 43rd Street, New York—a Jen-Dip that gives to flash lamps the amber tone required to balance flash lamps to the spectral characteristics of all tungsten type color film. To differentiate between the two Jen-Dips, the original version, which is designed to balance flash lamps to the spectral characteristics of daylight type color film, will be called Jen-Dip Blue Label, the new one Jen-Dip Red Label.

"Red Label" is designed to eliminate the use of compensating filters when making indoor flash shots in color. The depth of the amber, which is determined by the type and make of color film used, is achieved by the length of time the lamp is allowed to remain in the solution. The required timing varies from five to eight seconds.

The coating dries almost instantly. The new product sells for \$1.50 a bottle, with dipping beaker, and contains enough solution to coat 300 lamps. No exposure increase is needed when using the coated lamps.

Lighting

Side flash lighting by radar is offered by the Servo Flash unit introduced by Era Tool & Engineering Company, 9301 Belmont Avenue, Franklin Park, Ill. Use any flashgun with the camera, place the Servo Flash where you want to use it as a second light. No wires. When you press the button the flash goes off and the Servo Flash picks up the main flash so fast that both lights work within the period of exposure. Not only one Servo Flash, but several can be set off simultaneously in this way.

With a reflector and adapter, the Servo Flash costs \$25.40.

Flashguns in two sizes for the Kodak Target Brownies 616 and 620, with satin chrome finish, highly polished reflectors and taking standard base bulbs or midjet adapter, have been added to their line by Camera Optics Mfg. Corp., 101 West 47th Street, New York.

In Memoriam

Charles B. Phelps, Jr., FPSA

1891-1949

Charles B. Phelps, Jr., President of the Photographic Society of America since 1945, died January 19th at Grosse Pointe, Michigan, after a brief illness. He is survived by his widow and two sons.

President Phelps, who would have retired from the PSA Presidency at the Society's 1949 Annual Meeting in October, became a PSA member in 1937. He was appointed to the Board of Directors in 1939, and served as PSA Treasurer from 1940 to 1943. He was elected a Director for the period 1943 to 1945 and President in 1945, succeeding John S. Rowan, Hon.PSA.

Because of his interest in making, exhibiting, and collecting photographic prints, President Phelps was in 1940 appointed the Chairman of the PSA Honors Committee which selected the first Honors List of the Society. He served also as Chairman of the PSA Permanent Print Committee. He was a member of the PSA Pictorial Division since its organization in 1940.

President Phelps became interested in photography in 1905. He joined the Detroit Camera Club in 1935 and soon thereafter started his career as a participant in photographic salons on an international scale. In May 1945 the Smithsonian Institution, Washington, D. C., exhibited 40 of his outstanding pictorial prints. Also in 1945, the American Annual of Photography ranked him third among the world's most prolific exhibitors of the past five years.

He had been President of the Detroit Camera Club, of the Photographic Salon Society of Detroit, and of the Scarab Photographic Society of Detroit. He was a Fellow of the PSA, an Associate of the Royal Photographic Society of Great Britain, and an Associate of the Oval Table Society of New York.

Born at Detroit, Mich., educated in the Hill School at Pottstown, Pa., and graduated by Williams College in 1914, President Phelps served in the U. S. Navy during World War I. He was commended for photographing, from a lifeboat, the sinking of the patrol ship on which he had served and which went down after an accidental explosion. He was active in the automobile business for 15 years, serving for five years in London as Secretary and Director of Dodge Bros., Ltd. Later he was active in the securities business in Detroit, retiring some years ago to devote his time to photography and to photographic organizations.

During President Phelps' term of office, the membership of the PSA was doubled, the internal structure of the organization largely was revised, new activities were started, and the general operations of the Society substantially expanded.



Helene Sanders, FPSA

CHARLES B. PHELPS, JR., FPSA

The photographic world owes a large debt of gratitude to Charles B. Phelps, Jr. for his many years of devoted service to the cause of better photography.

In accordance with the By-Laws of the Society, First Vice President John G. Mulder, APSA, of Rochester, N. Y., automatically becomes President until the next Annual Meeting, October 19-22, 1949 at St. Louis, Mo.

Robert A. Barrows, FPSA

While at his desk in the accounting department of the Pennsylvania Railroad, Robert A. Barrows, of Philadelphia, Pa., suffered a heart attack and passed away on January 22nd. Mr. Barrows was a Charter Member and one of those responsible for the founding of the PSA. He served as a Director for many terms and headed numerous important committees.

Born in Indianapolis, he bought his first camera in 1910 but did not become aware of the real potentialities of photography until he joined the Photographic Society of Philadelphia in 1923, which he served as President. At the time of his death, he was Assistant Treasurer of the Oval Table Society.

* * * * *

It is also our sad duty to report the passing of the following PSA members:

Harold C. Amos, Brooklyn, N. Y., a Charter Member,
L. Leslie Buck, North Conway, N. H.
Merrill P. Mims, Waban, Mass., President, Boston CC,
Philip Sperry, Brooklyn, N. Y., Sales Mgr., Wabash.



ACROSS THE BAR

LEE A. ELLIS

From the PSA 1948 Exhibition of Photography

Expression of an Impression

By D. KINGSBURY, ARPS

THERE ARE two essential attributes required of a photographer before he can hope to produce prints of pictorial merit with any degree of regularity. First, he must be a master of his craft technically. Second, he must be a person with sensitive feelings and emotions, sufficiently near the surface of his consciousness to be called into play easily.

As to the technical side, there are plenty of text books. Every box of plates and packet of printing paper turned out by a reputable maker has its instructions. And in the photographic fraternity, there are the ex-

perts who are willing to pass on such knowledge as they have acquired. The larger the circle of acquaintances of any would-be pictorialist, the better his chance of obtaining help—hence the benefit of camera clubs. One worker may be good as a bromoilist, another expresses himself mostly in high key, etc.

A man's style is, in fact, some indication of his character and, in the same way, the character and outlook of a budding pictorialist will tend to lead him to a certain style without his realizing it, or, if he does realize it, without his being able to say why. A really accomplished pictorialist may be able to work in different ways and media to suit the particular subject he has in hand, which is an ideal worthy of our aim. But the beginner will almost certainly get lost if he tries to achieve exhibition standard in more than one style at first. He may have to limit his subjects to

start with in order to suit the chosen style—so much the better.

The beginner should, if possible, seek the advice of modern workers. Progress in the manufacture of materials has been rapid, and there is an ever-present tendency to simplify technique, so that some of the processes and special formulas beloved of the older workers have been discarded.

What of the artistic side? As a photographic novice, I well remember being confronted for years with the problem of what to take, and of making aimless visits to the zoo and to Kew Gardens in London, and such places, where the attractions were a change from every-day surroundings, rather than a very marked love of animals or flowers. The results could be classed as good snapshots.

The passing years, however, have brought with them appreciation of many of the pictures of others, and

A resident of Sutton Coldfield, England, Mr. Kingsbury is a member of the PSA and the Third Anglo-American Portfolio, as well as an Associate of the RPS. He is also past-president of the Sutton Coldfield Photographic Society. In May 1947, he visited the U. S., met many American members of the PSA Anglo-American Portfolios, and spoke at a dinner in Chicago given in his honor by Harry Langer.



"Fish on in Henfor," by Mr. Kingsbury, has received considerable acclaim.

with this an urge to do similar work myself. Comparatively recently I have been able to indulge this urge with some success, measured by acceptances in major exhibitions. I am quite sure that most others could do likewise — some a lot better and a lot quicker. There may be, however, some who are still perplexed by that question of what to take, or whose efforts to date have not met with their due share of appreciation, and perhaps they may find some help in my suggestions.

I shall not discuss pictorial composition, as this is largely a matter of rules, which can be found in books. Some workers will tell you that they ignore composition. They don't — they are applying the rules of composition unconsciously, as we all should. After we absorb the rules, they pass into that realm of the semi-

conscious known as second nature. Just as an undue preoccupation with technical matters is inimical to the production of pictures, so is undue concern with composition.

Art has been said to be the *expression of impression*. These words can hardly claim to explain it completely, but they are a very suitable starting point for pictorial photographers. Note that the phrase says nothing of beauty — which is largely in the eye of the beholder — the eye conditioned by the beholder's experience and outlook. What one person finds beautiful, another may find nauseating, sloppy, sentimental, harsh, artificial, etc., according to background and experience of life. Again, to many, beauty in a picture is measured by Grecian standards and by realistic presentation.

The painter may and does depart

from the realistic in order to convey his impression of his subject, and I see no reason why the photographer should not do likewise. As with life, so with pictures: the physical, represented by beauty, dies; the spiritual, represented by art, lives on. Art and beauty are not synonymous terms — a photograph of a crying baby may be good art, expressing despair and disillusionment, even though most of us would not like it, and it certainly would not be beautiful.

Example — Churches

To make a successful picture, therefore, we have to put on paper our impression of a certain subject. It follows that we must be capable of being impressed by that subject. If a person can go into a church and not feel a sense of reverence or of awe, he will never make pictures in churches. He may make some beautiful photographs which will be excellent records, and he may, with a knowledge of composition, achieve a picture in the literal sense of the term, but that picture will be dead.

With reverence and a love of old stone and beautiful carving, he will instinctively seek out views and viewpoints that convey to others his feelings, and he will wait for lighting effects (or achieve them by artificial means) that will enrich his subjects. Incidentally, this feeling of reverence has little to do with orthodox religion; it is based on a far more elemental streak of superstition to be found in all of us.

If, on the other hand, one goes into a church full of worries as to which lens he should use, what stop, what exposure, etc., there is little chance of any particular feature or aspect of that church making sufficient impression on him to lead him to want to photograph it. How, then, does one achieve the pictorial in this particular branch of photography?

I suggest starting on the first church at hand, with apparatus one already possesses, and proceeding to make photos of the simpler and evenly-lit parts. One then finds, probably, that his apparatus isn't particularly suitable — the lens has too narrow an angle of view, it is too difficult to see what is happening on



"Nude IV" is Mr. Kingsbury's favorite study. It was published in "World's Best Photographs," Series III. Studio shot, 1/50 sec., f 5, with Contax II.



"Lakeland Vista—Evening," a charming landscape, won a cup for Mr. Kingsbury.

the focussing screen, apparently evenly-lit surfaces are in fact very unevenly lit, etc.

One then sets about borrowing, buying, making or adapting apparatus on the basis of experience already gained, and has another try. At the same time, one is learning the purely technical side of suitable exposures and development for the material in use which should not be changed more than absolutely necessary. One is also learning to use reflectors or portable lights to help out such daylight as is available.

And so, after two visits, or 20 or 30, one achieves a state of detachment whereby one can walk into any church knowing that whatever subject presents itself, the camera and one's technique, which is now quite subconscious, can record it.

Perhaps over the same period, one is reading up the history of ecclesiastical architecture and learning to understand the significance of apparently unimportant nooks and crannies, thereby increasing his knowledge and appreciation of such buildings. The true history of England can be read in its churches by those who have the eyes and the knowledge. If the sequence I have outlined be followed by diligence, an impressionable person can hardly

help but produce pictures that will appeal to others of similar tastes, and they may be good enough to have a much wider appeal.

Landscapes

With landscapes, the love of the country-side, its cottages, its hills and valleys,—all must be there before anything beyond the picture postcard view is to be obtained. If the sight of a village nestling in a valley, on an early autumn evening, with smoke rising from the cottage chimneys almost vertically in the still air, leaves one unmoved, the chances of obtaining pictures worthy of hanging and living with, are nil.

Assuming that one has an urge to capture the serenity of such a scene, with sufficient practice, as outlined above, it can be done. The apparatus required will not be so specialized, but the need for a sensitive appreciation of lighting and atmosphere effects will be greater. There are no set rules. One cannot say that to obtain such and such an effect, one must have the sun's rays falling at an angle of $42\frac{1}{2}^\circ$, that the temperature shall be 55° in the shade, that the atmospheric humidity shall be 81 per cent, etc. By practice alone, one's instinct will tell him when conditions are right, and much patience

may be required before this happy state is obtained.

A picture is only complete if each separate aspect of it contributes to the expression of an impression. For instance, a picture of a landscape may have a thoroughly satisfactory composition and yet convey nothing. If, however, the tonal range, the disposition of the clouds, the direction and character of the shadows, the attitudes of men and beasts, if included, all contribute to the theme of, say, the English countryside at high noon on a quiet summer's day, then that picture will be wholly satisfactory. Again, if the clouds represent a turbulent state while everything else is somnolent, the effort will remain merely a photograph.

While there may be incongruous moments in nature, in general the sort of conflict of ideas I have just suggested, arise from the use of so-called control in printing—the use of more than one negative, for instance, and it is here that the guidance of one's original impression is all important. If one had no clear-cut impression at the start, it is possible to make all sorts of errors that will be obvious to a more sensitive or more observant artist, so that we come back once again to the need for a genuine love and sincere appreciation of landscape.

Studio Work

Turning now to studio work, if a pretty girl arouses no feelings in one,



"Hi" was made by Mr. Kingsbury from a 35mm negative.

or if one cannot pick out the essential character in a man's face, all the work of collecting together the lamps, properties, technique and, by no means least, making acquaintance with likely models, will be wasted. I occasionally have to meet the suggestion that I am lucky to have a studio, and a wife who lets me photograph her. But it seems to me more a question of "urge." If the urge is strong enough, the work involved in changing a room around, making lighting fittings and switchboards, in buying or borrowing backgrounds, properties, etc., is a labor of love.

Anyway, the first requirement for studio work is a studio and freedom of action. With regard to models, one has friends of both sexes, and those friends also have friends, so once success begins to come, the trouble is not to find them but to keep them away. Again, one's outlook and personality come into play—some models interest one, others do not, and a process of quiet selection goes on. One just has to dodge duty jobs as far as possible.

With regard to straight portraiture, one could mention a host of rules, such as never to have the shoulders square onto the camera, never to tip the contour of the far cheek with the nose, etc., but they would really be of little use to us, and we prob-

ably wouldn't remember them at the right time. These errors are inevitable as part of the training in technique, and their avoidance will become, in time, subconscious and we shall be able to proceed with an even surer touch.

Presupposing a perfected and forgotten technique, what remains to be done? First, establishment of happy relations between model and photographer—common interests with menfolk and a quite impersonal love for the loveliness of the ladies. I've yet to meet a girl who didn't respond to an appreciation of her beauty (real or imaginary). Next, the achievement of a state of mind that is sensitive to impressions that the personality or personal appearance of the model may conjure up. And, finally, the taking of photographs—lots of them.

Some workers claim to be able to visualize a picture—even to sketching it out before starting work—but I cannot get very far this way. I probably have a hazy idea of what I am going to do, but no set plan. It is an interesting point that retakes seldom come off. I cannot recapture the mood that existed when I first took the picture, and the subsequent prints show this.

Mortensen, in his "Monsters & Madonnas," where he gives the tech-

nical particulars of the taking of each picture illustrated, says in connection with several of them that he had exposed several dozen plates without getting at the theme he had in mind, and that just as the model was preparing to pack up, he suddenly saw quite a different aspect of the same theme, and got what he wanted right away. Notice the reference to "several dozen plates"—it's cheaper and easier on 35mm film.

Which Is Hardest?

There are frequent discussions as to whether it is harder to excel in landscape than in studio work. My opinion is that moderately good portraiture is easier than moderately good landscape work, since one has lighting entirely under control in the former. But when one comes to really outstanding work, there is not much to choose between the two in the matter of difficulty.

Figure work is perhaps the hardest branch of all pictorial photography. Much studio work fails because presentation and treatment are not in keeping with the subject. There is such a wide scope—hard and soft focus, dark and light background, strong and soft lighting, cream-based print, white-based, etc. It is when one hasn't formed a clear impression of the subject, or what the subject is intended to put over, that mistakes are made. A few workers use the same treatment all the time. Provided they use the same class of model and the treatment is suitable—for instance, old men done in low key, slightly soft focus—their work may be good but it will also be monotonous.

No matter what branch of pictorial photography we may practice, it is important that we give expression to our own impressions and not to anybody else's. If in any major exhibition a picture with a slightly unusual theme is shown, and it is a success, it is fairly certain that during the next year or two slight variations on that theme will crop up and, in general, the variations will be poor substitutes for the original because they will miss the essential insight which prompted the first worker to make his picture.



"The Crossways" is part of a 35mm negative made by Mr. Kingsbury.



"Evening Stroll" — one of the few diffused prints made by Mr. Kingsbury to try and hold the spotty highlights down a bit.

Probably some of the copyists are not even aware that they are copying, but that having seen the original picture, or a reproduction, and subsequently being confronted by a similar scene or model, are impressed not by the possibilities of that model or scene, but by its likeness to a picture which they have already seen.

For myself, I am very chary of even looking at any other similar work when I have a model on hand, for fear that the strength of any such pictures will destroy the embryo of an impression growing in my mind. For this reason, it is more difficult to use a professional model for figure work than to use a sympathetic amateur friend. The professional model will almost inevitably drop into one of the classic art school poses, which may be a snare and a delusion to a photographic artist.

If one's impression of a subject is

strong enough, one should have courage to defy accepted, or say, primary rules of composition; but without composition of some sort, I doubt if any picture can be really satisfying. It is, however, important to place the expression of the impression first, and compliance with a set of rules and conventions second. A true artist hardly need to be told this, but there are probably many of us who need some assurance and reminder.

To some extent, the opportunities to make worth-while pictures have to be earned, by travel, or by devotion to some hobby such as archaeology, amateur dramatics, mountaineering. While it is perfectly true that there are pictures all around us for those with eyes to see, for myself I look upon most cartwheels in the snow, battered dustbins and things like that as subjects for exercise in composition rather than material about

which I wish to express my impressions pictorially.

Judging

And now a few words in regard to judging and criticism, from both sides of the print. In submitting a print to a more experienced worker for criticism, try and secure the reaction which the theme of the print makes, and do not pay too much attention to detail criticism. Do not be disheartened by the failure of a print to catch the judges' eye at one particular exhibition. In the short time I have been making pictures, I've experienced some queer reversals of fortune.

To those who are asked to criticize prints by less advanced workers, I would stress the need for finding the idea behind the picture, rather than the odd highlight that wants toning down. If you can't find a theme, perhaps the objects or the per-

son depicted can suggest one that, if mentioned, might set the worker off on a useful line. Anyway, be gentle. Few of us have a sufficient reserve of artistic ability to stand rough handling in the early stages and might easily become discouraged.

To those of you who still feel that you have not within you the ability to make pictures by photography, I would suggest a test. When confronted by an acknowledged photographic picture, be it modern or old master, do you feel primarily interested in it for what it is, rather than for the technique that produced it? Can you feel the desire to look and to go on looking, to let the eye roam all over it, adding to the sum total of your original impression? There is some hope for the man who will unconsciously ponder over a picture like this before expressing an opinion. If, in such circumstances, only the definition of the image, the color of the base or the size of the mount interest you, I am afraid I just cannot help you.

BOOK REVIEWS

ALONG YOSEMITE TRAILS, by Josef Muench, Hastings House Publishers, Inc., New York 22, 101 pages, 6 x 8, cloth, illustrated, \$2.75, 1948.

In Yosemite National Park are 710 square miles of land, 429 lakes, hundreds of streams, five major waterfalls, a chain of mountain peaks averaging 10,000 feet, flora and fauna ad infinitum. No camera could catch all this grandeur, of course, but this "camera chronicle" with 146 photographs by Josef Muench, APSA, and a few words by Joyce Rockwood Muench, really puts the warm, human thrills of Yosemite between two covers. Those who have been there, and those desiring to go, will find vicarious delights in this book. Photographers will discover herein the vast difference between postcards and pictorials. No postcard pictures, and few pictorial photographs, ever were like these!—VHS

35MM PHOTO TECHNIQUE, *Miniature Camera Practice*, by H. S. Newcombe, The Focal Press, Inc., 381 4th Ave., New York 16, 354 pages, 5 x 7½, cloth, illustrated, \$4.00, 1948.

More than 20 years of experience with the miniature camera, both as photographer and photographic supplies dealer, enables the author veritably to cram this convenient volume with astoundingly practical knowledge. It was gained slowly, and the hard way, during years which found the author first disgusted with small-camera results, then challenged, and finally

becoming a miniature camera user who is undeniably an enthusiast but no fanatic. Mr. Newcombe admits that all cameras have limitations, but insists the miniature is the most versatile. Starting with the premise that photographers, like cameras, differ variously, and establishing his conviction that excellent results with the miniature demand rigorous compliance with technical requirements, Mr. Newcombe proceeds to explain in detail, with tables, diagrams, photographs, and other data, the operating methods and equipment which he, personally, has found most satisfactory. Readers should be forewarned that Mr. Newcombe's enthusiasm for the miniature is delightfully contagious.—VHS

COLOR TRANSPARENCIES, *Exposure, Processing, and Viewing*, by C. Leslie Thompson, The Focal Press, Inc., 381 4th Ave., New York 16, 271 pages, 5 x 7, cloth, illustrated in color, \$4.50, 1948.

This volume is the field and darkroom companion for photographers who make color transparencies. It starts by explaining fundamentals of color theory in an understandable way, then proceeds through materials, equipment, exposures, processing, and display to end with a practical chapter on fault-finding and trouble-finding. In each field, operation, and step the author points out essential factors, while 35 color reproductions of slides, 54 formulas, and eight tables further contribute to understanding. The author's objective is revelation of the direct practical applications and effective use of current materials and equipment.—VHS

PHOTOGRAPHIC EMULSION TECHNIQUE, by T. Thorne Baker, American Photographic Publishing Co., 353 Newbury St., Boston, Mass., 356 pages, 5½ x 7, cloth, illustrated, \$7.50, 1948.

This is a second, revised, and enlarged edition of a textbook for manufacturers, experimenters, and workers in the field of making photographic emulsions for plates, film, and paper. A large proportion of the text is devoted to the nature of materials used for emulsions. One entire chapter deals with present and prospective uses of new emulsion materials to be found among the plastics. While the book is directed chiefly to the attention of technical folks, amateur photographers interested in various paper emulsions will find helpful information on carbon, carbo, gum, kallitope, platinotype, palladotype, and other metallic processes. Materials and equipment used both in monochrome and color photography are covered exhaustively.

THE NEGATIVE, *Exposure and Development*, by Ansel Adams, Morgan & Lester, 101 Park Ave., New York 17, 120 pages, 6 x 9, cloth, illustrated, \$3.00, 1948.

Second of a projected series of six basic books by Ansel Adams, this volume presents Mr. Adams' personal and productive practices in visualization, light evaluation, exposure, development, and after-treatment of the negative. Not only are technical aspects of negative-making treated understandably, but Mr. Adams describes his

system of coordinating all factors and requirements to produce planned results in negative and print. Separate chapters are devoted to scene visualization, light meters and their use, exposure, development, spotting, retouching, and defects.

The book seeks to bridge the gulf between the scientific and creative aspects of photography and, explaining Mr. Adams' working procedures, to enable photographers, by serious study and practice, to employ visualization and planned execution in creating photographs. Those lacking the opportunity to study under Ansel Adams personally will find a reasonably satisfactory alternative in this meaty book.

PHOTO-FLASH IN PRACTICE, by Geoffrey Gilbert, The Focal Press, Inc., 381 4th Ave., New York 16, 254 pages, 5 x 7½, cloth, illustrated, \$3.50, 1948.

Here is a book helpfully informative of the pertinent relationships between flash and its action, equipment, negative, subject, color, daylight, nighttime, multiple units, and use. Photographers accustomed to seeking flash data from annoyingly diverse sources can turn to this book with assurance that the data are printed herein, concisely, simply, and practicably. Take the case of flash in outdoor photography. Voluminous and conflicting wordage has confused the photographer to the point of dizziness. Here 17 pages, of which eight are pictures, tell exactly what to do and how to do it. The 15 other chapters are equally revealing.—VHS

THE ART OF THE FILM, by Ernest Lindgren, The Macmillan Company, New York, 242 pages, 1948, \$4.50.

Ernest Lindgren is a member of the British Film Academy, the British Film Institute and Curator of the National Film Library. In addition, he has made a study of film technique over a period of years, thus acquiring an extensive knowledge of all aspects of the structure of the motion picture.

In the preface of "The Art of the Film" Mr. Lindgren states that his purpose in writing the book was to provide a means "in which the fundamentals of film criticism were simply yet comprehensively set forth and which could confidently be recommended to anyone becoming seriously interested in the cinema. . . ." In this he has achieved his purpose.

The first two chapters contain a discussion of the work of the craftsmen and technicians who produce the pictures and the equipment which they use. The movie maker may wish to skip these chapters. However, he will want to read the subsequent chapters in which the author discusses the anatomy of the fiction film, basic principles of editing, the use of sound, the art of the cameraman, film music, film acting, and the film as an art.

Although "The Art of the Film" was written primarily to aid the filmmaker and the student in the appreciation and understanding of motion pictures, the book is just as useful to the movie maker. It will make an excellent addition to the library of anyone who desires to increase his understanding of motion pictures.—ASN

Saving the PSA Light Box

SECOND INTERIM REPORT

By H. LOU GIBSON, APSA

SINCE THE publication of a former report, (Lighting of Exhibition Prints for Judging, PSA JOURNAL, Vol. 14, Sept. 1948), a good point for consideration has arisen—saving the present PSA light box. Many clubs have built new boxes, some of them conveniently collapsible for portability and some even with revolving backs. It is natural that the possibility of having to scrap these boxes is perturbing.

However, the original report has been occasionally misconstrued to the extent of assuming that the spotlight method, given as an example in it, is the *only* way the subcommittee recommends that prints be viewed. It should be emphasized again that the *method* of lighting the print is not the concern of the subcommittee. *Rather, the aspect that we propose to standardize is: illumination of suitable intensity and of even distribution, used with room lighting of good gallery level.*

Thus, if the illumination from any existing setup can be evened out and made of reasonable brightness, so much the better. With this in mind the author has experimented with a box of the PSA type to find out how to make the illumination even. The reader will recall that grading devices were previously suggested to accomplish this and that they were deemed "elaborate." It turns out that a relatively simple means can be adopted to grade the illumination of the PSA box, although the procedure requires quite a bit of experimentation.

First of all, since the room lights should be on for viewing, it seems advisable to remove the top canopy from the box. This is desirable because the room lighting usually casts a shadow of the canopy across the print. It may be practical with some boxes to cut the canopy at a slant so that the front side is not deep enough to cast a shadow. However, the illumination should come, if possible, from the bottom trough of the box. To grade it, a piece of glass, suitably painted, can be fitted inside the trough over the lights. This is shown in the figure. The glass should be snugly as wide as the trough and about one inch less in depth. This will permit some adjustment in position after it is painted.

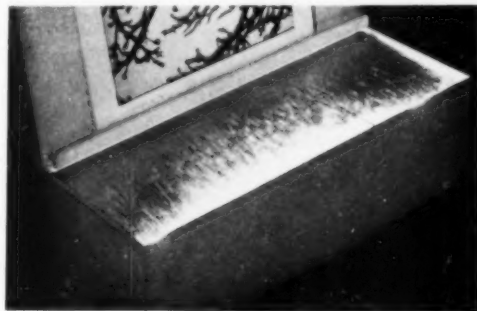
The graded density is provided with a bake-on aluminum enamel. Such an enamel is neutral in color even when applied thinly; and a good grade does not discolor from the heat of the lamps. The glass can be baked if a large enough oven is available or it can be air dried. In the latter case, the enamel does not get as hard as in the former; nevertheless, it is still very durable.

The author used "Light-Flex,"* which is an aluminum, bake-on, enamel that is available in small convenient bottles for painting reflectors and shields on ordinary

light bulbs. One bottle was sufficient for the glass, but two are safer for "cut-and-try" experiments. A stiff, "paste-brush", type of brush comes in the bottle and this kind of bristle is essential for the thin, streaky application required.

The enamel was applied (with the glass in place in the trough) thickly only at the edge next to the panel; then thinner and thinner streaks were put on away from this edge. The pattern was curved so that the greatest masking was done near the bulbs. Pieces of card on the glass can be used to indicate where shading is needed. Light meter readings off a white blotter were made to check the evenness. Steel wool was used (after drying) to thin down dense portions for adjusting the pattern. In spite of the lamps being very close to the panel in this particular box, it was possible to hold the evenness of illumination to within satisfactory limits. In cases where the overhead lighting is not troublesome it would be an excellent idea to put a graded glass over the top lights in the box. Then the illumination could be made extremely even. The glass should not be visible from the judges' viewpoint.

It was necessary to utilize 150-watt lamps in the trough in order to maintain an intensity of 25-foot candles. In some boxes, it may be necessary to put 3 or 4 sockets in the trough to achieve the requisite intensity. The level can be read with a meter off a clean, new white blotter and is 6:5 for the Weston meter and 4 for the General Electric with the cover open. Some ventilation of the box is necessary and lamps should not be too close to the wood. About six inches is desirable. The wood can be painted with the enamel to reflect off much of the heat. Of course, the sockets should be located and the lamps put in before the grading is started. Any changes necessitate altering the pattern but this can be done with more



A graded piece of glass fitted over the lights.

* Product of the Light-Flex Company Inc., 607 Powers Building, Rochester 4, N. Y.

enamel or by reduction with steel wool should changes in sockets or bulbs be necessary.

Window glass was found to crack under the heat from the lamps. Therefore, a sheet of $\frac{1}{8}$ -inch, semi-tempered, "Herculite", plate glass was obtained from a distributor for the Corning Glass Company. This glass withstands considerable heat. The corners were rounded to a $\frac{1}{4}$ -inch radius and the edges were ground.

This seems to be the answer to saving the PSA light box in cases where it is desired and when the club is willing to work out a suitable grading pattern for their setup. Nevertheless, the spotlight method outlined in the former report is gaining ground and is worth first consideration when a new lighting means is to be constructed.

A Suggestion for Camera Clubs

Since it is not wise to establish a standard without thorough investigation, the subcommittee is not in a position yet to recommend a final viewing intensity. An experiment conducted by the author through the kindness of Dr. C. J. Marinus, APSA, during his Print Clinic at the Cincinnati PSA Convention seemed to indicate that 25-foot candles plus 10-foot candles room illumination is a good intensity level. The eventual recommendation will come in the form of a PSA Standard.

The clubs may well ask: "What are we going to do while the Standards Committee is making up its mind?" First, salon committees seem obligated to judge under

the present level and system, (unless they have made a definite improvement that would not be practical to change), since print makers can only make their prints for this level until a new one is generally adopted. If they have the PSA box and departures from the former recommendation have occurred, then the originally proposed 60-watt lamps should be returned to use. Blue lamps should be discarded.

Second, clubs are urged to experiment with the suggestions and intensity levels of the current subcommittee. Any experiments or equipment they make will not be wasted because the final standard will involve nothing more than a possible change in intensity.

Third, any suggestions for this subcommittee are definitely wanted. They should be passed along to the Division member listed in the September report.

In making experiments, there is one major aspect to keep in mind. It is not the average intensity level that a given viewing group prefers that is important. It is how well a print stands up when it gets to the walls of a reasonably well-lighted gallery that counts. The details of this aspect are discussed in the former report. It is also impractical to set print brightness as a basis for standardization since this will differ with the over-all densities and it would be burdensome to vary the illumination to suit each print. The main factor that is to be determined is the intensity of illumination that is a good average for all prints.

PSA Honors Committee

RULES AND REGULATIONS FOR 1949 HONORS APPLICATIONS

BY P. H. OELMAN, FPSA

Chairman, PSA Honors Committee

Appointment to membership on the Honors Committee of the PSA is perhaps the highest compliment which the President and the Board of Directors can pay a member of the Society, for it is evidence of utmost confidence in his integrity, judgment, and courage. But service on this Committee is no sinecure. It is a difficult as well as a responsible task.

This is the way the Committee functions: All applications and supporting evidence is received at PSA Headquarters in Philadelphia. The applications must then be duplicated by the Committee and copies distributed to all its members for study. The information given in the application varies from the brief statement that the candidate is a blank star exhibitor to pages of hyperbole which would put an inspired press agent to shame.

Despite the fact that some applications even list the country clubs to which the candidate belongs, additional information pertinent to the application must often be sought. This involves much correspondence between Committee members and with others. In order to keep all

members current with this correspondence, it must be prepared with eight carbon copies.

Then there is the matter of the supporting evidence. Sometimes there is none. Yet one candidate last year sent almost everything but his darkroom. Subcommittee members familiar with the particular field of the candidate's stated achievement must appraise this material in Philadelphia for it is too bulky to permit shipping to other points. When the sub-committees' reports have been distributed to all Committee members, the latter are ready to begin serious deliberation.

Confronted by this mass of information and misinformation or the lack of either, each Committee member now tries without fear or favor to sort the wheat from the chaff and to evaluate the former in the light of the established standards. Generally two ballots are necessary and after the final tabulation, the results are reported to the PSA Board of Directors.

After Honors have been announced at the Annual Awards Banquet, the President or the Committee usually receives a vitriolic letter or two from an over-zealous proponent of a candidate who did not receive an award. These are isolated cases and are not under consideration.

But the Committee is genuinely concerned with the constructive criticism which it has received. With minor deviations, this falls into two categories. First, that many worthy persons are overlooked by the Committee, and second, that the Committee makes its decisions in secret on the basis of policies and standards known only to itself.

The first of these criticisms should be directed to the membership of the Society as a whole rather than to the Honors Committee. The Committee serves the interests of the Society best by maintaining a judicial position, considering only those applications presented to it. Strangely enough, most of the critics are themselves guilty of the sin of omission for which they blame the Committee. A typical example is that of a research worker who could not understand why one of his colleagues had not been honored. Inquiry developed the fact that neither the critic nor any of this worthy candidate's associates had proposed his name, and furthermore, that the person in question was not even a member of the Society, probably because no one had thought to ask him to join.

To meet this situation every member of PSA is urged to see to it that persons who are interested in the advancement of photography join the Society, not for the purpose of receiving honors but to share in its work.

Next, each PSA member should consider other members with whose work he is thoroughly familiar and who have made valuable contributions to the advancement of photography. If, after careful consideration unbiased by friendship or personal obligation, he appraises the achievements of sufficient importance to deserve consideration by the Honors Committee, he should propose the person for honors.

The Technical Division has already appointed a committee to bring worthy candidates to the attention of the Honors Committee. No doubt other Divisions will take similar action, and the president is appointing a committee to seek out those who have no Division affiliations.

Just one word of warning. No member should sign an Honors Application either as proposer or endorser merely as an accommodation to a friend. To sign an application either as proposer or endorser without an honest conviction of its merit is to do an injustice not only to the Committee but to the Society and the candidate as well. Realizing that it is sometimes difficult to say no to a close friend, the Committee holds in strictest confidence any letter written by a signatory to an application, whose conscience dictates that he should explain that his signature was obtained under a mild form of duress.

The second criticism, that the policies and standards of the Committee have not been publicized, is justified, but there are extenuating circumstances. The new PSA By-Laws eliminated almost all of the rules under which the Committee had operated and gave it *carte blanche*, subject to annual review by the Directors. Because of an inadequate budget which placed a severe financial burden on the Chairman, who also had to contribute a vast amount of time, last year's Committee was unable to find a member willing and able to accept the onerous duties of Chairman and perfect its organization until

shortly before the deadline for the receipt of applications. This year's Committee has already held a meeting at Cincinnati attended by all of its eight members, and is determined to rectify the situation. A draft of its proposed policies and procedures was submitted and was reviewed by the PSA Board on November 6, 1948.

New application forms with revised instructions are available at PSA Headquarters, 1815 Spruce Street, Philadelphia (3). By following the instructions closely, members will render a great service to the Committee and to the Society.

Article XIX of the PSA By-Laws authorizes the Honors Committee to award the Associateship and the Fellowship and to recommend to the Board candidates for Honorary Membership and Honorary Fellowship. The policies and practices adopted by the Honors Committee are as follows:

The Application

All applications for honors must be made on the Honors Application Form (revised January 1949), and must be submitted to the Honors Committee in care of PSA Headquarters, 1815 Spruce Street, Philadelphia 3, Pa., together with evidence in support of the application on or before June 1, 1949, and thereafter on or before April 1, beginning 1950, to receive consideration in the same year.

The application shall contain factual information regarding the achievements of the candidate in one or more of the fields listed below. The statement should be prepared by the proposer who may be the candidate himself or other member in good standing, in the case of the Associateship application, and must be a member in good standing other than the candidate in the case of all other honors. To be most effective, the statements contained in the application should be limited to information having a direct bearing on the achievements on which the application is based. Irrelevant information should be eliminated. For example, awards and degrees, etc., conferred by photographic, scientific, and similar organizations for accomplishments in the field of endeavor are pertinent, but statements regarding the candidate's membership in country clubs, social and fraternal organizations, etc. are not desired.

Each application shall be endorsed by two members of the Society in good standing who have a personal knowledge of the achievements of the candidate (in exceptional cases where, because of isolation or other valid reason, it is impractical to obtain qualified endorsers, the Committee may, at its discretion, waive endorsements if the statements of the proposer can readily be verified through other means.)

Evidence in Support of Application

Obviously, evidence should be limited to that which supports the application. Examples of pertinent evidence are given under the fields of achievement listed below.

Qualification of Candidates

The Associateship

The Associateship may be awarded by a majority vote of the Committee to any person who has been a member of the Society

in good standing for at least one year immediately preceding the date of the application, for material contribution to the advancement of photography. Examples of such contributions are a high degree of proficiency in the use of photography in any artistic, scientific, commercial, or similar field which tends to raise the standard of excellence; publication of papers or improvement in processes; writing, speaking, the organization and direction of camera clubs, etc. Except in unusual and especially meritorious cases, candidates should have been active in the field of achievement for a period of at least five years.

The Fellowship

The Fellowship may be awarded by a three-fourths vote of the Committee to any person who has been a member of the Society in good standing for a period of at least one year prior to the date of application, for outstanding achievement in or contributions to any field of photography. The requirements are more exacting than for the Associateship and except in unusual and especially meritorious cases, the candidate should be an Associate and have been active in the field of achievement for a period of at least ten years.

The Honorary Membership

The Honorary Membership may be awarded by the Board of Directors upon recommendation by the Honors Committee. A three-fourths vote of the Committee is required for recommendation. This honor is awarded for outstanding contribution to the work of the Photographic Society of America. The candidate for Honorary Membership need not be a member of the Society.

The Honorary Fellowship

The Honorary Fellowship is the highest honor awarded by the Society. It may be awarded only by the Board of Directors upon the recommendation of the Honors Committee. A unanimous vote of the Committee is required for recommendation. It is given to worthy candidates who have made a unique or outstanding contribution of major importance to photography. The candidate for Honorary Fellowship need not be a member of the Society.

The Honors Committee reserves the right to award or recommend honors other than those proposed if it deems them more appropriate to the achievements cited.

Fields of Achievement

Applications for Associateship and Fellowship may be submitted in the following fields of achievement:

1. Pictorial (including Portraiture)

Since pictorial photography is closely allied with salon exhibiting and competitions, considerable weight will be given to the candidate's salon and competition record, awards for pictorial merit, etc. At least six and not more than ten examples of the exclusive work of the candidate should be submitted.

2. Color

As in pictorial photography, weight will be given to exhibition records. Since most transparencies are commercially processed, however, they do not necessarily indicate a thorough knowledge of color photography nor proficiency in color processes. A statement of the candidate's mastery of the various processes is important. At least a portion of the examples submitted should have been processed by him, and each should indicate what portion of the sample is his exclusive work. Ten transparencies or six transparencies and four color prints should be submitted. Candidates for Fellowship are expected to submit prints as well as transparencies which they have processed.

3. Motion Picture

The candidate's experience in producing, directing, editing, and processing films, or his contribution to the arts and sciences per-

taining to the making of motion pictures, should be indicated. At least two and not more than three pictures should be submitted. The extent to which the candidate engaged in the production of each must be stated.

4. Photo-Journalism (including Documentary Photography)

The extent of the candidate's experience and his connection with publications should be indicated. Notable examples of the use of his pictures for reportorial purposes or as illustrations to articles and books should be given. Ten examples of his work should be submitted.

5. Nature

Some weight will be given to the candidate's exhibition record, but information regarding his background in natural science, the inclusion of his work in the collections of museums of natural history, etc., and the use of his pictures to illustrate books and articles on nature are important. Ten examples of the candidate's work should be submitted. These may be transparencies or prints or, if desired, not more than two motion pictures may be included.

6. Photographic Research

The statement of the candidate's accomplishments should clearly indicate the degree of responsibility for the direction and results of the research. Published reports of such research should be listed as to title, date and place of publication. If available, reprints of published papers should be submitted.

7. Scientific and Applied Photography

In this category achievements in the application of photography to scientific, industrial, and commercial fields will be considered. This includes photomicrography, medical photography, spectrography, astronomy, x-ray, high-speed photography, aerial photography, graphic arts, commercial and advertising illustration. New applications of photography to the solution of problems should be cited. Ten examples of the work of the candidate should be submitted. Motion pictures may be submitted if appropriate.

8. Education

The organization, supervision, and teaching of classes; the writing, publishing, or editing of photographic publications; and similar educational activities should be cited. Evidence to be submitted may consist of catalogues, class outlines, reprints of published writings, and copies of publications.

9. Organization and Promotion of Photography (for Associateship only)

The organization and direction of camera clubs, councils, exhibitions, and other photographic activities, and the dissemination of photographic information through lectures or writing for or editing of local publications, arranging programs, etc. as well as noteworthy service to PSA by participation in membership drives and similar activities will be considered. The Fellowship will not be awarded for work of this character. For outstanding contributions to the work of the Society, see Honorary Membership.



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PSA INTERNATIONAL PORTFOLIOS

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PSA AMERICAN PORTFOLIOS

Eldridge R. Christhill, Hon. PSA, Director
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PSA INTERNATIONAL EXHIBITS

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PSA AMERICAN EXHIBITS

Ralph L. Mahon, Director
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PSA PORTFOLIO CAMERA CLUBS

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1949 PICTORIAL DIVISION YEARBOOK

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SPEE SPEAKING

SEWELL PEASLEE WRIGHT
Editor, THE FOLIO

It has taken me a long time to become steamed up about the PSA International Portfolios, and the International Exhibits, but when I actually saw examples of these activities, at the PSA Convention in Cincinnati, I quickly ran a temperature.

Those of you who, like myself, have been interested solely in the "local" Pictorial

Portfolios will find that these other outstanding activities of the Pictorial Division have much to offer you!

Speaking of the Pictorial Portfolios, I know you'll all be much interested in Doc Cochran's report on the work of the portfolio secretaries in speeding up the 'folios.

Month after month, in these columns, there are many suggestions for getting more out of the portfolio activity, but I know of no single contribution which would help more than *promptness*.

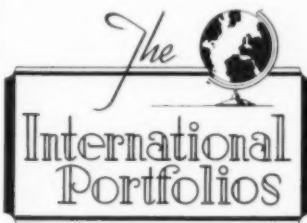
If each of us would try to *beat* the five-day limit, each of us would get a bigger and better run for his money, because the portfolios would come around more often—a consummation, as old Bill puts it, devoutly to be wished.

One of the 'folio circles to which I belong is lucky enough to have Anne Dewey as commentator. When she took over the job, she put a pair of large cardboard "L's" in the case, to help the croppers.

This strikes me as an excellent idea, because the Ls are always handy. Maybe you'd like to make the same sort of contribution to the next portfolio that comes your way, with a little comment in the notebook to call attention to the fact that Something New Has Been Added.

The St. Louis crowd is making *big* plans for the PSA Convention, October 19-22, 1949. I live close to St. Louis, and I know what's going on there. You'd better start making your plans now, so you'll be set when the time comes to attend what may be, what probably *will* be, the best and biggest PSA Convention in history!

Do you have your copy of the Pictorial Division Yearbook? It's Vol. 1, No. 1, and it will soon be a collectors' item in photographic circles. It's a buy out of this world; get yours before they're all gone!



Portfolio Composites

By FRANCES S. ROBSON, APSA

Those who attended the recent PSA Convention at Cincinnati and visited the "Portfolio Room" or headquarters of the Pictorial Division, were attracted by three exhibits: the Royal Photographic Society group of fine prints; the Mahatma Gandhi

pictures from India; a set of 12 salon-size composite prints of some of the PSA International Portfolios, both foreign and American circles.

The writer, originator of these composites, records every PSA International Portfolio in this manner, sending copies not only to the American Secretary and Director of International Portfolios, but also copies to the foreign membership of the circles.

Excerpts from several letters of acknowledgment from foreign Portfolio Secretaries follow. R. Wilsher, ARPS, of Chesterfield, England, former Secretary of Anglo-American Circle #2, wrote:

"It was most kind of you to make and send a set of prints for each of our members over here, and I am about to circulate them, so no doubt you will be hearing from the people concerned, individually. I am delighted to know that you find our prints so enjoyable and hope that with the new rules about to be applied (the Turbott Plan) you will be able to see new ones more often, and similarly, we shall see more of yours. These exchanges seem to be giving much pleasure to all concerned, and I look forward to long and close association with you all.

Dr. G. Thomas, ARPS, APSA, Bangalore, India, Secretary of the First India-American Circle, says:

"I was most touched by your kind thought in sending us the very fine memories (composite pictures) which I will certainly distribute to my members, who will very greatly appreciate your gesture. This idea of taking a picture of the whole circle has never struck us in all these years, and I am now regretting what glorious opportunities I have been missing, of keeping a very comprehensive file of over 1000 prints we have circulated these past eight years in our folios.

I must also say that if I had attempted the same thing I might have made a mess of it. You have done, on the other hand, a grand job. In fact I am not exaggerating when I say that our pictures look infinitely better in your picture than in the originals.

Your memento will help to bring home to me and my members the appreciation of you folks in America. Let our future folios bring you and us closer and closer together in pursuit of the great art of which we are devotees.

I am having portfolio exchanges with Russia and Australia also, and will soon rope in Czechoslovakia and Hungary. So, we grow broader and broader. I would like to hear more often from you and other folks down under.

A third letter was received from Harold A. Larsen, PSA and Pictorial Division Representative New Zealand, and General Secretary of the Australasian-American Portfolio:

"Your letter and parcel of prints arrived yesterday and I find myself without words adequate to express my pleasure. It is really most kind and thoughtful of you to make prints for each of us, and I shall be delighted to distribute prints to our members. I know that everyone will be as pleased as I am, and perhaps even more so, because they have not yet seen them grouped.

It was very interesting to me to contrast the moods of the various pictures, and there is something like the same contrast to be found in the American group, between the quiet beauty of your own print and Herbert Ohm's, and the strong pattern of Alfred Watson's boats.

All in all, I am thoroughly enjoying this Inter-

national Portfolio business, and it's the unexpected kindness and courtesy, like your letter and prints, which just put the final touch of pleasure to the whole thing.

A word as to production of these composites. Upon the arrival of the portfolio, the pictures are pinned on a background board in the studio, grouped as nearly as possible in vertical format, and photographed, using two #2 Photoflood lights, equally spaced on either side of the camera and aimed at the light colored ceiling, to avoid distracting glare on the prints. Occasionally, for a low key print, a special small light is directed upon it, to help balance the light reading of the whole. This is a real problem, for the Weston meter records some prints at 0.4, others as high as 6.5. An average only distantly approximates the all-over exposure.

A 4 x 5 Speed Graphic is used, with Super Panchro Press Type B cut film and a Kodak Ektra f/4.7, 127mm lens. The camera is set high enough to center on the board. Film is developed in DK-50. Some of the pictures on the film have to be held back in printing, while others are spot printed for varying times. Sometimes parts of the film are treated with new cocaine or Victor Intensifier, with a brush, to strengthen and bring out detail in weak areas. With a lot of coaxing, it is possible to obtain an over-all even enlargement. But every composite made, requires the same treatment! The work is more than compensated for by the satisfaction of having such a record of the portfolios, and by the pleasure of the recipients in the finished product.

A Portfolio of Portfolios

Out of the Convention grew a new idea, attributed to Dennis R. Anderson, of New Castle, Indiana, and approved by Director of International Portfolios Ray Miess. A "Portfolio of Portfolios", made up of these composite prints in salon size, is to be sent on tour to photographic clubs, to illustrate what the International Portfolios are.

With the composite prints will be a sheet telling how they are made, a typical folder, with comments, a typical notebook comment sheet, and a blank sheet for club comments.

Mr. Anderson states that there are 14 clubs within a radius of 60 miles of New Castle, which he will undertake to circularize on a trial run. If successful, the set will be available to other PSA clubs.

Did You Know That . . .

By FRANCES S. ROBSON

... An official communication from the Club Fotografico de Cuba reads as follows: "Complying with a resolution of the Board of Directors, I have the pleasure of informing you that at a meeting the 26th of this month the following resolution was passed: 'Designate delegates to represent this Club at the Convention to be held by the PSA the coming month of November at Cincinnati.' The following associates are appointed: Mrs. Mercedes L. de Quintana de Tomayo, Messrs. Angel de Moya, Hon. C.F.C., Morris Aberbuch, and Dr. Armando

International Portfolios

There are openings in the following PSA International Portfolios for Pictorial Division members who are interested in interchanging prints for comment and analysis with the leading photographers in foreign countries:

First Egyptian-American
Second South African-American
Fourth India-American
Fourth Canadian-American
Sixth Swedish-American
Second Australasian-American
Second French-American
Third Cuban-American
First Anglo-American Medical
First Netherlands-American

For information write to Director of International Portfolios, Mr. Ray Miess, 1800 North Farwell Avenue, Milwaukee 2, Wisconsin.

G. Menocal; which delegation will be under the chairmanship of Mr. Angel de Moya. (Signed) Dr. Alvarez Prieto, Secty."

Mrs. Quintana won friends everywhere at the Convention, with her charming personality. She is a famous portrait photographer in her own country, and is active in the First Cuban-American Portfolio.

Angel de Moya, who received his Association at the Convention, has done an outstanding piece of work for PSA, in the PSA International Exhibits and Portfolios. He is General Secretary of the Cuban-American Portfolios, and in the last three months has signed up more than 23 new members for PSA in his country. Being in the banking business in Havana, he does a great deal of traveling and has many interesting contacts. Dr. Menocal and Mr. Aberbuch completed the "foursome". They were all more than welcome, and aided in bringing increased friendship and understanding between the two countries.

Some of us were privileged to view a few of Mr. de Moya's own pictures, which were shown one evening after the regular program. (See cover.) They were much admired by all those present. He is a real photographer, as well as a genuinely fine friend.

Perfect timing was effected by Hugh Montgomery, member of the 4th Anglo-American Portfolio, when he personally delivered the portfolio to Dr. Glenn Adams of Cincinnati, on the exact date upon which it was scheduled to arrive, November 4th? The event was celebrated by a dinner at Dr. Adams' home, which was attended by all members of the 4th A-A Circle who were at the Convention. Besides Dr. Adams, the host, present were D. Ward Pease, Jane Shaffer, Harry R. Reich, Hugh N. Montgomery, John R. Hogan, Harry Shigeta (representing his business partner, George P. Wright), Mrs. Shigeta, Ray Miess, and Burton D. Holley.

International Portfolio Secretaries signing the "Register" in the Portfolio Room at the Convention were Burton D. Holley, Lewis T. Reed, W. V. Sminkey, Ralph A. Ross, Rennie I. Weber, Hugh N.

Montgomery, E. W. Blew, Edith M. Royky, Andree Robinson, Ethel E. Hagen, Sam Rawley, Angel de Moya, Alfred Watson, Sten Anderson, and Frances S. Robson,—a total of 15 Secretaries out of 19 International Portfolio Circles?

Canadian portfolio representatives at Cincinnati were Sam J. Vogan of Toronto, of the First Circle, Canadian-American Portfolios, who presided at one of the Color Division meetings, and Harry L. Wadd'e of the Second C-A Circle.

Somebody Did ! ! ! !

BURTON D. HOLLEY, APSA

I expect that every member of the PSA International Portfolios, at sometime or other, has wondered if the foreign members of his particular portfolio ever bothered to utilize the constructive comment of the American members on the foreign prints.

You know the kind of specific comment I have in mind . . . the 'darken the corners', 'tone down the highlights', 'print on harder paper', 'trim two inches off the top', 'crop four inches off the left and make a vertical print of it'—kind.

Well, somebody did ! ! And it happens to be Clarence Ponting of 'the Little House', Pangborne, Berkshire, England, member of the First Anglo-American Portfolio. Not satisfied just to mentally picture what effect the American suggestions would have on his print, and not completely satisfied with just masking off with "L" squares the portions that were considered unessential by the American members, Clarence Ponting went to all the work and effort to make separate and individual prints according to the recommendations of each American member.

What was the result? Well, Clarence has written up his experience and conclusions in an article published in the Spring 1948 issue of "Good Photography" published in London, England, under the title of "Cropping (The American and British Points of View.)"

Taking as his subject for the experiment his print, "Tranquil Waters," which made the first circuit in the First Anglo-American Portfolio, Clarence Ponting, in following the American comments, split it in the middle to make two vertical pictures; trimmed off the bottom to make a long horizontal picture; trimmed off both right and left sides to utilize only the center portion; and in various other ways attempted to put into effect the American suggestions.

Not having a release from copyright from the "Good Photography" magazine (though we hope to eventually, for the PSA International Portfolios already has reproduction privileges from photographic magazines all over the world) I cannot quote Clarence Ponting's exact words of the article, but his final and considered judgment was that, to his surprise, the best of the 'cropped' prints was in many ways superior to his original print. This was entirely unexpected, for "Tranquil Waters" in its original form, had been accepted for innumerable exhibitions, had been widely published, and hundreds of

copies had been requested by members of the Allied Forces during the last World War.

From the foregoing it is incorrect to assume that all the American members of the First Anglo-American Portfolios were in unanimous agreement as to the best way to improve the print. Far from it . . . many of the suggestions were contradictory. However, the sum total of all the comments by the ten members in the United States did serve as a stimulant to explore the possibility of improvement, with quite successful results.

To Clarence Ponting's mind, the essential difference between American and British approaches to composition (and that a difference exists is quite obvious to members of the PSA Anglo-American Portfolios) is that in Britain, unity is obtained by leading lines, balance of masses and tones, and the inclusion of considerable subordinate material solely for the purpose of pointing up, or complementing, the principal theme. In America the desired 'singleness of idea' is obtained by eliminating all superfluous, all non-essential material from the picture by trimming and cropping in order to concentrate all attention on the 'center of interest'.

Are you interested in learning the essential differences between the practice of photography in its pictorial aspects in this country and in the other countries of the world? Would you like to have some foreign expert help you, as the American members of the First Anglo-American Portfolio stimulated Clarence Ponting of England? Would you have the 'gumption' to actually try out, to put into practice, the help you get from capable skilled photographers abroad and overseas? If so, and if your work is up to a quite reasonable standard, you are invited to join one of the PSA International Portfolios. Portfolios with new countries, as well as additional circles of existing international portfolios, are constantly being formed. For complete information about joining write to Ray Miss.



Pen Pals

Major Edward J. Hobbs, of Cleveland, is now handling the foreign 'pen pal' correspondence activity of the PSA International Exhibits.

Major Hobbs receives letters from amateur photographers all over the world who wish to correspond with some photographer in America. Many interesting friendships have resulted from such contacts, and they

present an opportunity to learn first-hand about conditions in foreign countries.

If you are a member of the Pictorial Division and would like to correspond with some photographer in a foreign country, write Major Edward J. Hobbs, 1673 Union Commerce Building, Cleveland 14, Ohio, giving a few facts about yourself, and any preference as to country.

RPS Show

The PSA International Exhibits recently received a set of 67 prints from the Royal Photographic Society of Great Britain, which were of extremely high quality. Included were prints by such well-known photographers as Fennah, Herbert, Johnston, Keighley, Parsons, Maingot, etc. The RPS show was on display in the Pictorial Division room at the PSA Convention in Cincinnati, and is now traveling throughout the country.

New Exhibits

The PSA International Exhibits activity is glad for three new exchanges with foreign countries, as follows:

Hong Kong Photographic Society and the Washington CCC

The photographic work of China is known all over the world for its excellent quality, technique, and unique method of approach. Through Francis Wu, FPSA, Pictorial Division Representative to Hong Kong, we will soon have a set of 50 to 100 prints by amateur photographers in China. The Chinese prints will go to the Washington Council of CCs at Auburn, Washington, in exchange for their set of 50 salon prints which will be sent to China. Later the China show will be circulated among other PSA clubs.

Mysore Photographic Society and Metropolitan CCC

A set of prints will be available from the Mysore Photographic Society of Bangalore, India, in exchange for a show of 50 salon prints selected to represent the Metropolitan CCC of New York.

1940 Portfolio Circle and Akron Camera Club

Through Dr. G. Thomas, ARPS, APSA, of Bangalore, India, we are arranging an exchange of prints which he has collected from members of his 1940 Portfolio Circle. Each member represents a different camera club or organization in India. The prints from the Akron CC will be circulated among all the clubs in South India, and then transferred to D. C. Engineer, APSA, ARPS, at Ahmedabad, to circulate through his group of clubs in Northern India. In this way the exchanges with India will travel through a great deal of that country before being returned.

The purpose of the PSA International Exhibits is the advancement of photography as an art, and the establishing of closer relations between American photographic organizations and those in other countries of the world, through the inter-

change of pictorial print shows and exhibits.

The exchange shows are to be used primarily for camera club programs. After an explanatory commentary is read to the club members, giving general information about the club from whom the prints have been received, the prints are put through the light box and points of interest discussed by the club members or a qualified commentator appointed for the evening. After this program, the club secretary should write a letter, briefly stating the club's opinion of the prints. This is sent to the Director, PSA International Exhibits, enclosing enough club stickers for each print of the exchange show. Some clubs, who have facilities for exhibiting the exchange prints on their walls under proper conditions, are allowed to keep the prints a week or two after their program night in which to display them. Foreign shows are returned after one year's time; after which new ones are made up for the next exchange. All PSA International Exhibits will be available to other PSA clubs after they have completed their initial exchange circuits; and itineraries are now being worked out. If your club is a member of PSA and is interested, write to Director, Dr. Glenn Adams, 9 East Third Street, Cincinnati 2, Ohio.



Our Secretaries

The assignment of a member in each of the portfolios to act as secretary seems to have solved one of the problems of administration. The original idea of having a secretary in each portfolio was to lighten the burden of the Director, Mr. Christhill. This was accomplished in good fashion, but one of the nicest things was a by-product. The secretaries have acted as expeditors and have kept the folios moving faster than ever before.

Before the advent of the secretaries it was common for a portfolio to be late anywhere from one to six months. Since the secretaries have taken over only two portfolios have been late enough to cause comment and these two delays were in no way the fault of the secretaries. When the responsibility was placed on a member of the portfolio, that member kept after the laggards and it now seems that if someone receives his portfolio two days late it is cause for concern for everyone in the circuit.

The amazing thing about the whole reform is the small amount of work actually required to accomplish this miracle. About two evenings a year and a few minutes every week or two is all that is needed

to keep the ball rolling. The small amount of work has paid off, if we are to believe the new secretaries, in satisfaction and intensified interest in the circuit.

You know that when a person does a good job he gets another job. The secretaries have done a good job so now they have another one. Here it comes. All secretaries of portfolios are hereby appointed as Assistant Sub-regional Associate Semi-Official Editors of "The Folio." We would like to hear from people who are nearest the individual members of the portfolios. You are nearest the news and the comment and when there is news or comment we would like to hear about it too. It has been mentioned before in these columns that all readers of "The Folio" were assistant editors and contributions would be acceptable. This still holds but a little more emphasis is directed to the secretaries because they should be the most fertile field.

Whatever else the secretaries do is fine, but the job which they have done so far deserves compliments and congratulations.

Contact Prints

Have you been including a full negative contact print with your portfolio entries? This is a growing practice which has proved to be a great help in commenting on a print in many cases. The instructions for the handling of a portfolio say "nothing about this, but the idea is catching on and it can be a big help. With a full area in front of you when you are taking your friend's print apart there is no longer any need to ask if there is any more at the top, or if it is possible to include a little more on the left. When you make your print for the portfolio, simply take a few more minutes and make a contact print showing what is contained on the whole negative and mount the print on the inside of the folder when you put in your print.

Many photographers, if they have time, make several shots of a subject. This is particularly true of still life and portrait subjects. If there is some questions as to which negative will yield the best print, there is no reason why you cannot include contacts from several negatives and prove, or disprove, the wisdom of your choice. Some members have included as many as a half-dozen contact prints on the chance that they have overlooked the best choice. In any event a contact can many times prove a great help to the other members and perhaps to you.

Honors

Elsewhere in PSA JOURNAL you have seen the announcement of the award of Honors at the PSA Convention at Cincinnati last November. It is with pride that "The Folio" calls your attention to the Honors received by portfolio people.

Our Director of American Portfolios was one of the most honored. Eldridge R. Christhill, APSA, was cited as an Honorary Member of PSA, one of the highest honors which can be awarded by the Society. It is now Eldridge R. Christhill, APSA, Hon.

PSA American Portfolios

Enrollments are now being accepted in the following specialized portfolio groups:

Pictorial
Portrait
Nature
Photo-Journalism
Control Process
Star Exhibitor
Color Print

If you are interested in joining one or more of these groups, drop a card to Eldridge R. Christhill, APSA, Director, PSA American Portfolios, 5819 N. Ravenswood Ave., Chicago 26, Illinois, and information and enrollment blanks will be sent you.

PSA. Additional recognition of Christhill's fine work came in the award of the Stuyvesant Peabody Memorial Award. This award is made each year to the person who has contributed the most to pictorial photography in the past year. The untiring efforts of our Director have insured the great success of the whole American Portfolio program, and the Peabody Award simply confirms what we knew all along. Heartiest congratulations, Eldridge!

Three members of portfolios were awarded associate-ships. Three more APSAs are now in the distinguished group that makes up our American Portfolios. They are:

Tom Firth, of Trappe, Md., a member of Pictorial Portfolios 7 and 29 and of the Star Exhibitor Portfolio 2.

Frances Robson, of Vina, Calif., an Associate Editor of "The Folio," and a member of Pictorial Portfolio 6.

Al Watson, of Buffalo, N. Y., a member of Pictorial Portfolios 7 and 29 and of the Star Exhibitor Portfolio 3.

In the distinguished group that serves as commentators, six men were honored; three became Fellows, and three are now Associates. Those who became APSA are:

Isabel Deschin, Brooklyn, N. Y.
Eldridge R. Christhill, Pasadena, Calif.
Harry Langer, Chicago, Illinois.

The three who were advanced from APSA to FPSA are:

Paul Linwood Gittings, Houston, Texas.
L. Whitney Standish, Boston, Mass.
John H. Vandell, Amherst, Mass.

Medal Award

Once more the Pacific Coast comes thru with a Portfolio Medal Award winner. This time it is Larry Foster, 1807 Highland Ave., Manhattan Beach, California, and his winning print "The Critic" travelled in Portfolio #58. It was accepted and hung in the Pasadena Second International Salon.

The idea for "The Critic" came from watching a judge examine a print for signs of air brush work. In writing about the print Mr. Foster said, in part, "It has given me a good deal of pleasure to have this particular print win recognition. The model was my brother-in-law, Greg Stidd. He passed away about a month after I made

the picture so you see we all have a sentimental feeling for this print."

The camera used was a 9 x 12 cm Voightlander with a 3 1/4 x 4 1/4 Graphic back. The camera was equipped with a 135mm Skopar lens. The key light was a Baby Keg about seven feet from the subject. The fill light was one #2 Photoflood in a 14" reflector at the camera. Back lighting was furnished by the light box in which the secondary print was displayed. Exposure was 1/25 sec. at f/11. The negative was Defender X F Pan, developed to a gamma of 1.0 in D-76. The print was on Defender RT #2—a straight print—developed in Dektol.

Since being accepted and hung in the Pasadena International, the print has been accepted and hung in the 2nd Annual Pales Verdes Salon of the South Bay CC where it won second prize.

PSA Pictorial Portfolio No. 56

Eugene Wladislav, Northfield, Minn.
Gladys J. Wolf, Redmond, Oregon
Harold O. Richter, Pittsburg, Calif.
Robert D. Morris, Hawthorne, Calif.
Jerre R. Hassell, Dallas, Texas
S. D. Chambers, Port Arthur, Texas
Frank E. Johnson, Jr., Birmingham, Ala.
James J. Johnson, Marietta, Georgia
George W. Triplett, Cumberland, Maryland
Joseph G. Barnett, Newark, N. J.
Lisle W. Wright, Bayside, L. I., N. Y.
Stephen Hugler, Simsbury, N. Y.
John Matis Jr., Cleveland, Ohio
Roy H. Curtis, Grosse Pointe Park, Mich.
Capt. Earl Schubert, Rantoul, Illinois.

PSA Pictorial Portfolio No. 57

Miss Esther Peters, Rochester, Minn.
William Cottingham, Winfield, Kansas
Al Lundquist, Medford, Oregon
Frank J. Belders, San Bruno, Calif.
George L. McConnell, Santa Ana, Calif.
Earl H. Hites, Gatesville, Texas
William A. Murphy, Montgomery, Alabama
Dr. William F. Geuse, New Bern, N. C.
Silson Horwitz, Harrisburg, Penna.
Dennis A. Simonetti, Jersey City, N. J.
Edgar J. McNabb, Baldwin, L. I., N. Y.
Noel F. Wellman, Kearsarge, N. H.
Walter J. Arrault, Birmingham, N. Y.
Warren Oakes, Vandalia, Mich.
Henry Fine, Chicago, Ill.

Thoughts on Portfolios

By EDWARD W. HUTCHINSON

Looking back through the notebook of our portfolio circle a few days ago, it was rather a surprise to me to realize that this particular circle will soon have been circling for three years. The fact set me to summing up my feelings and thoughts on the portfolio. Perhaps others, both in and out of this type of photographic activity, may be interested in sharing these reactions with me.

While the criticism of prints is the real business of the activity, the notebook provides some of the greatest pleasure. For through it members correspond amicably, able to exchange views and information—both photographic and personal.

From the start it has been clear to me that belonging to a portfolio is fun. But, of course, I joined for more important reasons. The main one was to improve my own work. I also quite sincerely thought of the help I might give to others.

The first thing that I asked myself the other day was: are we getting as much as



THE CRITIC

Larry Foster

we could and should out of this? I must answer frankly: *far from it!* We are all enjoying it and we all feel now that we are friendly and frank with one another. However, I wonder if we could pick out any one member and say of him with certainty that he has consistently been doing his best in every way in the circle. I know that if we could be examined and rated, I would come pretty low on the list.

Here is the big reason. We are supposed to send prints which we hope are of exhibition quality, in order to find out what the others think of them. Out of goodness-knows-how-many circuits of my two portfolios, I have only done this about three times.

Why? Well, several times I deliberately sent prints with faults of composition, etc., to see how the others would criticize them. Then on several occasions I have been very busy and have selected something I thought would be adequate. On the whole I have tended to send prints which I really believed were not good enough for exhibition, but which I liked. I wanted to be told why they were not good enough—although I really knew why. Another fault is that I have usually not sent the best print of a subject when I had several. I felt that it might get damaged—and the opinions on the less good print would probably give me the help I wanted. This is a selfish attitude and I regret it. But I am sure that others have been doing exactly the same.

I am now resolved that in the future I will send only the best print I can make of the shot I select. Furthermore, I shall send only subjects which I believe to represent my best work—which I either intend to submit to exhibitions, or have submitted and had rejected without understanding why. I believe that no member of a portfolio should do anything else—I mean, send his best. Of course, if one's work is not yet up to exhibition standard, one still may, and should, join a portfolio group.

Another thing that strikes me is that often comments seem wide of the mark because the writer does not understand what the photographer was trying to do.

Or it may be that ignorance of the subject matter causes mistaken criticism. For instance, my part of the world had an ice-storm some time ago. Two shots of mine sent to portfolios were made at this time. A number of my critics were quite exercised about the look of the stuff—didn't look like ice; didn't look like snow! Well, no, it doesn't. It is rain that freezes on striking the ground, trees, twigs, houses, etc., on which it falls.

Now, it seems to me that if they stuck to criticism of my prints as a pictorial essay, then they would not have been confused by irrelevant issues. These are Pictorial Portfolios, organized under the Pictorial Division of the PSA. The prints submitted are not supposed to be mere records, however good technically or interesting. The Technical, Photo-Journalism, Nature and other Divisions exist for such work. Far too many prints sent to the Pictorial Portfolios are simply not pictorial.

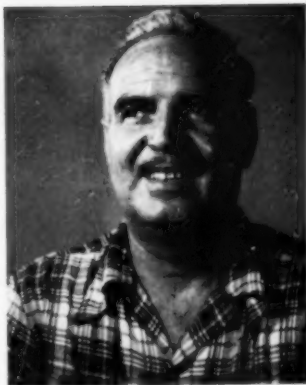
It may or may not be relevant to complain about a pictorial print that it shows snow not looking like snow, water not like water, sand like something else, or skin like sand. In some cases it may be right to have a correct rendering in order to convey the feeling required. But in others it may be better to sacrifice or suppress such correct rendering for the sake of creating or emphasizing design or pattern.

On the outside of the folder into which each print is inserted, one must write all relevant information regarding both negative and print. Last but one item to be filled in is "Aims or intentions". I am sure that I and my fellow circle members have not properly availed ourselves of that space. We have not been ready to state enough and to go thoroughly into our aims and intentions in making the photographs we have sent. It seems to me that for us to make full statements here is one of the most important things we can do in our portfolio activity. We should write at least as much about each of our prints here as the others do about them on the criticism forms.

For instance, a recent print of mine showed four children hunting tadpoles in a pool down in a dell. I was strongly criticized for not moving in closer. Our commentator went so far as to suggest that I eliminate two children and use only two in a close-up. He is constantly urging us to "move in, move in".

I admit that close-ups in photography are usually more effective—but not invariably. In the case of this shot I wanted to convey the feeling of the hunt in the dell on a balmy spring morning, when the rousing world is big and children are small, but actively happy. The photograph I made did fail. Further, a close-up would no doubt have provided a good picture. But the point is that I did not want that kind of a picture—and the criticism, therefore, was irrelevant.

I remember a shot of a little child half way up—or down—a flight of stairs. It conveyed delightfully the feeling of being a small child, pensive on the stairs. It recalled A. A. Milne's equally delightful



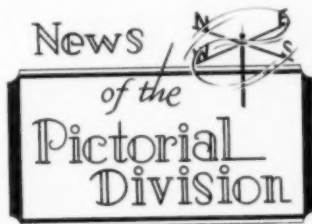
LARRY FOSTER

verses on the same subject. A close-up of this child, showing part of one or two stairs might have provided a fine photograph, but it would have been only another nice shot of a nice child and not something with a great deal more appeal and significance, showing insight into the condition of childhood. Space and background may be important merely as such—in removing the subject from the too great photographic actuality of the close-up.

And so, to sum up, it seems to me that if portfolio members will be strict with themselves and send only prints representative of their best; and that if at the same time they will state fully their aims and intentions in making that photograph, then criticism will be more enlightened; the portfolios even more helpful and interesting than they are.

As regards writing in the notebook, let me add that I think that we could get far more out of that, too. Not by being less informal and chatty, but by writing more and telling more about our activities, our problems and methods of work.

If we want to receive more, we must give more.



Chairman Holley announces the appointment of two new directors of present Pictorial Division activities, and the organization of an entirely new activity.

Dr. Glenn Adams, 9 East Third Street, Cincinnati 2, Ohio, was appointed *Director*, PSA International Exhibits to replace W. V. Sminkey who resigned on January 1, 1949. Sylvia Sminkey, former Assistant

Director, will continue to serve on the PSA International Exhibits Committee, representing the Chicago Area CC's Association.

Claxton Searle, 2220 Clay Street, San Francisco 5, California, has been appointed Editor of "The Pictorial Division Yearbook for 1949" which will be published in time for distribution at the PSA Convention in St. Louis in October. A Life Member of PSA and the Pictorial Division, Claxton is an active member of the California CC, Editor of their "Viewfinder" and chairman of the Print Committee. His article on "Railroad Photography" appeared in the November, 1947, PSA JOURNAL. In the October, 1948, issue of "The Folio", Claxton was honored as one of the first PSA Portfolio Medal Award winners.

Ralph L. Mahon, 260 Forest Avenue, Elmhurst, Illinois has been appointed Director, PSA American Exhibits, the American counterpart of the PSA International Exhibits. Ralph is the Past-President of the Chicago Area CC's Association, and of the Bell, and Elms Photo Arts CC's. He has also served for several years as the CACCA "Association News" Editor. The first project of the PSA American Exhibits is the collection of a pictorial print show which will be exhibited at the P. A. of A. Convention in Chicago in August. This is being arranged through Paul Linwood Gittings, FPSA, FRPS. Future services of the PSA American Exhibits will be the circulation among PSA American clubs of outstanding pictorial shows and exhibits.

Award of Merit

New PSA One-Star Exhibitors:

| | |
|-----------------------|----------------------|
| Theodore L. Brinson | Paul L. Hansen |
| Laverne L. Bovair | Frank J. Heller |
| Wilson R. Boone | David E. Kirkpatrick |
| F. Schuyler Dauwalter | Sarah Martin |
| Howard R. Foste | Tilghman McCabe |
| John E. Glendon | Lewis T. Reed |
| Robert K. Graul | |

Advanced from One-Star to Two-Star:

| | |
|------------------------|--------------------|
| Dr. Glenn Adams | Louis J. Farkis |
| Eagle W. Brown | Kanti Patel |
| M. M. Braderick | F. L. Purington |
| Allan I. Horvath | G. I. Weisenburger |
| Dr. Raymond R. LaFelle | Edwin B. Whinnom |

Advanced from Two-Star to Three-Star:

| | |
|------------------------|--------------------|
| H. J. Eisenberger | Edith M. Roocky |
| Thomas T. Firth | Warner Taylor |
| Betty Parker Henderson | J. Philip Wahlman |
| Alfred H. Hyman | Doris Martha Weber |
| Frances T. Robson | |

Advanced from Three-Star to Four-Star:

| | |
|------------------|---------------|
| Frank R. Frazier | John R. Hogan |
|------------------|---------------|

For full information about the PSA Award of Merit Activity of the Pictorial Division, write to Harry V. Clery, Jr., Director, 4426 Lancaster Avenue, Philadelphia 4, Penna.

Portfolio Camera Clubs

Committee:

Dr. W. Warren Ruepke, Director, Owatonna, Minn.
 Sten T. Anderson, Lincoln, Neb.
 Dorothy M. Cashman, Springfield, Illinois
 James D. Ballo, Jr., Kalamazoo, Mich.
 Frank F. Meadows, Rocky Mount, N. C.
 V. Stephan Johnson, Dallas, Texas.
 Carlton Lingwall, Great Falls, Mont.

Honorary Committee Members:

Burton D. Holley, Chairman, Pictorial Division
 Edridge R. Christhill, Director, American Portfolio



JOHANNES—GOOD FELLOW

From The Rochester International Salon of Photography

R. Winquist

Participating Camera Clubs:

Owatonna Camera Club, Owatonna, Minn.
 Lincoln Portfolio Camera Club, Lincoln, Neb.
 Rochester Portfolio Camera Club, Rochester, Minn.
 Austin Portfolio Camera Club, Austin, Minn.

Present Sponsors:

Anne Pilger Dewey, APSA
 Robert L. McFerran, APSA
 J. Philip Wahlman, APSA
 Doris Martha Weber

The plan for this new PSA Pictorial Division activity is comparatively young, but the experimenting is over, that having been done by the Owatonna CC of Owatonna, Minn. Indeed, the idea was originally designated as the "Owatonna Plan", but that name is now to be discontinued.

A Portfolio CC is a group of eight or more individuals, all belonging to PSA Portfolios, who band themselves together as a Portfolio CC and thereby get added benefits they could not otherwise enjoy. The activity is also open to camera clubs already organized, more than half of whose members belong to portfolio circles.

The Portfolio CC idea was planned to help smaller communities enjoy a type of club activity that would bring them some of the help and inspiration that was not otherwise available. While we have learned that there is a place for this new type of club in large cities, this project will be the most useful activity ever offered the

non-metropolitan amateur photographers. It is planned to study the national need for such clubs in the light of where they will do the most good for the individual and the PSA Portfolio movement.

There are now four clubs already taking part in this activity and it is hoped that there will be at least 15 by convention time in 1949.

Coming Exhibitions

American Photography. (M) Closes March 15, exhibited in April. Data: American Photography, 353 Newbury St., Boston 15, Mass.

Seattle. (M) Closes Mar. 16, exhibited Apr. 6-May 1. Data: Ray B. Pollard, 4061 56th Ave. S.W., Seattle 5, Wash.

Runcorn. Eng. (M) Closes March 17, exhibited Apr. 20-23. Data: R. J. Edwards, 10 Victoria Rd., Runcorn, Cheshire, England.

Port Colborne. Can. (M) Closes Mar. 26, exhibited Apr. 10-23. Data: J. O. McKellar, 26 Tennessee Ave., Port Colborne, Ont., Canada.

Southgate. Eng. (M, C, T) Closes Mar. 29, exhibited Apr. 30-May 7. Data: Victor H. Scales, 51 East 10th St., New York 3, N. Y.

Syracuse. (M, C, T) Closes Apr. 4, exhibited Apr. 30-May 15. Data: Dr. Newton E. White, 730 N. A. & K. Bldg., Syracuse 5, N. Y.

Hamilton, N. Z. (M, C, T) Closes April 14, exhibited May 9-Aug. Data: Harold A. Larsen, Box 324, Hamilton, New Zealand.

Halifax. Can. (M, T) Closes Apr. 30, exhibited May 25-27. Data: W. Roy Isnor, 217 Agricola St., Halifax, Nova Scotia, Canada.



THE LONG ROAD HOME

L. Whitney Standish, FPSA

FROM THE 1948 SEATTLE INTERNATIONAL SALON



FROSTY BROOK

H. J. Ensenger

Color

By REV. HERMAN BILLENBERG, APSA
3 Pearl Avenue, Oil City, Penna.

It is with a feeling of diffidence that I finger my editorial pen, and undertake to write these monthly columns containing news of the Color Division. My reluctance in assuming the duties of chairman of the Color Division is born of a lack of time properly to carry on the work, of a knowledge of the vastness of the field of color photography and a realization of the expert direction given the Color Division in the past. My hope of accomplishing some small measure of progress lies in the assurance of cooperation given me by many friends, of former officers, as well as in my ardent love for color photography and my admiration of the inventive genius that lies back of the reality of color pictures.

Without meaning to overlook others who have labored energetically in the Color Division, we feel that the name of H. J. Johnson, APSA, deserves recognition for his crisp, efficient direction of the Color Division. It is largely due to him that the progress of the Division has been as rapid as it has been. His foresight and vision are seen in the varied activities carried on for the benefit of its members. Efficient regulation of exhibitions, print and slide circuits, exhibition sets, the Division Bulletin, slide competitions, etc., are a few of the forward steps inaugurated under H. J. Johnson's leadership and aggressively fostered by George Blaha, his successor. To follow men like these is like trailing someone who is wearing seven league boots.

However, with all the assurances of cooperation and assistance we have received, with the knowledge that the Color Division is faithfully organized under efficient leaders, we assume the tasks confronting us hopefully. Color photography is in its early infancy. The future is vast and unpredictable. It is a thrill to be connected with a field where potentialities are so overwhelming.

Club Slide Competition

Popularity of the National Club Slide competition is evidenced by the fact that 60 clubs are represented this year, an increase of seven over last year. The October New York Slide Club judging was attended by over 300 people. Judges were Lester Baker, Jr., Frank Gunnell, APSA, and Arthur Mawhinney, FPSA. Winning club in Class A was the San Francisco Photochromers, while Class B winner was the Cream City Color club.

Individual winners were Dr. Robert Price (San Francisco) "Midway Point," 24 points; Miss D. M. Russell (Natural) "Blue and Gold," 23 points; Frank Proctor (Phoenix) "Along the Salt River," 22

points; Ed Rosenberg (Sierra) "Road Home" and H. G. Strausz (Yakima) "Watching the Sunset," 21 points.

Second place in Class A was Phoenix with 102 points; Jackson (Denver) was third with 100 points; Kodak and Sierra were tied for fourth with 99 points. In Class B, Salt Lake Photochromes were just a point behind Cream City. Jackson (Mich.) was third with 81 points, closely followed by Koda Roamers with 80. Venango was fifth with 78 points.

Print Competition

Printon, dye-transfer, wash-off and hand-color were represented in the 25 prints submitted by eight persons in the first competition of the 1948-49 season. One entry was received from India. Judges Geo. Blaha, Wm. Dennin and W. K. Raxworthy selected: 1—"Fishing Gear" by Ruth Sage, Buffalo, N. Y.; 2—"David Teich, APSA," by Howard Foote, New York City; 3—"Parasol" by Joe Kennedy, Tulsa, Okla.; 4—"Niagara" by Alfred Watson, Buffalo, N. Y. Honorable mentions went to "Critical Decision" by Ruth Tremor, Buffalo, N. Y.; "Lady in Black," by Joe Kennedy, Tulsa, Okla.; "Day Dreams" by S. V. Gopal Row, Madras, India.

Rejected

By a stroke of good fortune, the following was not one of our personal worries. It seems that a well-known show used a 'D' on exhibit report cards. Fearsome contributors, upon investigation, found that their fears were justified and that the initial stood for 'declined', not 'delightful'. In future, it might be well to reject 'declined' and to accept 'rejected'.

International Slide Exchanges

Indicative of the interest in the work of

foreign color workers is the fact that requests for our International Slide Exchange sets have been twice the number of book-ings that we are able to handle.

These sets answer the questions of what subjects are preferred by workers in other countries, what are the differences in methods of presentation, what is the technical quality level, and what types of color film are used. In addition, they help create a greater bond of unity among photographers throughout the world.

In each exchange, one of the Color Division sets goes to the other country for circulation to camera clubs there.

The first Australian-American exchange and the first Holland-American exchange will finish their circuits in February. Following them are the Canadian-American and the Mexican-American exchanges.

Newest exchange in process of organization is the First India-American. Member Gopal Row is assembling the India set and will direct the circulation of the American set in that country.

Coming Color Exhibitions

5th San Francisco, San Francisco Art Museum, Mar. 5-12. Deadline Feb. 19. Four slides, 8". Forms: Alice Cooper, 1. Montgomery St., Rm. 1304, San Francisco, Calif.

Pittsburgh, Carnegie Institute, Mar. 18-Apr. 18. Deadline Mar. 2. Four slides, 8". Forms: Karl S. Leach, 92 Estrella Ave., Pittsburgh 11, Pa.

Michigan Nature, Cranbrook Institute of Science, Mar. 12-Apr. 18. Deadline March 14. Four slides, 8". Forms: Roger E. Richard, 1823 N. Guller Rd., Dearborn, Mich.

Halifax, May 25-27. Deadline Apr. 30. Four slides, 8". Forms: Peggy Wright, 96 Quimpod Rd., Halifax, N. S., Canada.



By H. J. JOHNSON, APSA
1614 West Adams St., Chicago 12, Ill.

How Good Is Your Club?

Some camera clubs do not have enough merit to justify their existence; others, because of their efficiency and the ability of their members, are recognized and respected as "good" camera clubs.

Many factors make the difference. Some of these can be evaluated, others can not. In general, those clubs which excel in tangible merits are the best clubs. A club which can attract most of its membership to meetings is better than one where the attendance is only a fraction of the membership. A club which can develop members who become recognized (in exhibitions, contests, etc.) as photographers is better than one where the members remain snapshooters.

Continuing thus, we can assemble the factors which make a good camera club, assign values to them, and have a rating scale which will enable clubs to compare themselves with other clubs.



Such a scale, based on experience with many clubs, is presented here. It is not to be taken too seriously, but is at least interesting (perhaps revealing) to find where your own club might stand. Just tabulate your scores.

Attendance. If 86-100% of your members attend meetings, give your club 15 points; if your attendance is 71-85%, credit 10 points; 55-70% gives 5 points; no credit under 55%.

Dues. If your members are 91-100% paid up in dues, add 15 points; 81-90%, 10 points; 71-80%, 5 points; no credit under 71%.

Meetings. If business requires no more than 15 minutes of your meeting time, add 10 points. If you have a starting time and actually get started within 5 minutes of that time, add 5 points. Add another 5 points if you have a scheduled adjournment time and adhere to it.

Now to the total score obtained so far, add 1% for each 10 members, but no more than 10%. For example, if you score 10 points on attendance, 15 on paid-up dues, 10 on business held to a minimum, and 10 points for starting and stopping on time, your score would be 45, to which, if you had 50 members, would be added 5% or 2 points, for a total score of 47 so far.

Add 1 point for each year of existence of your club, but no more than 6 points.

For each publicity item in magazines or newspapers, add 1 point, but no credit beyond 10.

For each article or picture published, or exhibition acceptance by members, add 1 point, but no credit beyond 10.

Add 3 points if your club is affiliated with PSA or a camera clubs association.

If your club enters outside competitions, such as the PSA Continental or the club slide competition, add 5 points more.

If you bring in at least 3 outside print or slide exhibits during the season, add 5 points; if you send out an exhibit from your club at least once each season, 5 points more.

Add 5 points if your club has a darkroom; add another 5 points if you publish a bulletin.

If you furnish transportation to your guest speakers, add 2 points; if you also furnish a dinner for your speaker, add another 2 points. If you pay your speakers, credit 6 points.

Now to the total score obtained so far, add 5% if your club meets weekly; add 3% if you meet once in two weeks; or 2% if you meet once a month.

Now check your total score in the following table:

| Score | Club Rating |
|----------|--------------------|
| 0-30 | Elect new officers |
| 31-50 | Just a camera club |
| 51-70 | Average |
| 71-90 | Good |
| Above 91 | Superior |

Average of clubs rated with this scale so far is 60.

Field Trips and Outings

There is considerable difference between outings, field trips, and picnics. The latter

have no place in camera club activities because their chief concern is food and play, with a camera taken along "just in case." Better leave picnics to family groups, social clubs, etc.

Photographic outings differ from picnics in that the purpose is photography, with food and play secondary. These have some justification in club activities occasionally but tend to gradually deteriorate because eating and playing are so much easier than creating.

The field trip's purpose is serious photography and has an important place in any well rounded club program. An instructor or guide is provided, picture problems are discussed, and various methods and approaches to each problem are suggested. On such a trip there will be joking and laughter, but little "playing" and the food is entirely secondary, perhaps a couple of sandwiches in a side pocket and drink from a lake or stream.

If your club wants to develop members into photographers, field trips will help greatly.

Help for Organizing Exhibits

Sooner or later, if your club is progressive and ambitious and is in a city of 100,000 or more in which there is not already a national photographic exhibition, you will consider the question of sponsoring such an exhibition.

As to whether or not there are already too many print shows, there is considerable debate. Our own opinion is that there is still plenty of room for high quality, well managed shows. Undoubtedly there is room for color and nature shows.

If you decide that your club will sponsor a print, color, or nature show (or a combination of these) one of your first steps should be to obtain as much information as possible on procedures and standards for such exhibitions.

If it is to be a color show, PSA Color Division has a "Show packet" containing necessary information which can be sent to you upon request. If it is to be a nature show, drop us a note and we shall see that you receive outline information. If it is to be a print show, the Pictorial Division's booklet on such exhibitions may be obtained from Burton D. Holley, 4425 Seeley Ave., Downers Grove, Ill.

PHOTO-JOURNALISM

By CLIFF EDM, APSA

18 Walter Williams Hall, Columbia, Mo.

Thanks to the cooperation of every member of the Advisory Board, the Jury of Selection, and the photographers in many states and many nations—this year's Sixth International Newspictures of the Year Competition and Exhibition, sponsored by the School of Journalism, University of Missouri, and the Encyclopedia Britannica was probably the biggest and best of its kind ever held. Here are a few of the statistics: Entries were received from 31 states, the

District of Columbia and Hawaii, and from Australia, Scotland and England. Five hundred eighty-six photographers representing 99 newspapers, 7 syndicates and a number of magazines were in this year's competition.

Total number of prints in show 2,464
Total number of portfolios 97
Total number of picture series or sequences 67
Total number of news pictures 397
Total number of feature pictures 1,155
Total number of color entries (transparencies) 64

The Annual of The American Society of Magazine Photographers, "Photographic 1948," was worth waiting for. It is a beautiful book, excellently designed—a great contribution to photo-journalism. You'll like it.

* * * * *

You'll enjoy, too, "Photography Yearbook 1949" (published for "Photography") by the Press Center, Ltd., London, edited by Harold Lewis. Especially interesting is the 25-page picture-text on "Press and Magazine Photography" with articles by K. Hutton of the London Picture Post and by Mr. Lewis, editor of the yearbook. American contributors (photographic) include Tony Frissell, Barbara Morgan, Fred Stein, Frank Scherschel, and others.

* * * * *

Those interested in the history of illustration will welcome "The Pictorial Record of the Old West," a series of bulletins issued by the Kansas Historical Society, Topeka, Kan. Authored by Robert Taft, professor of chemistry at Kansas, the series—featuring early genre painters and sketch artists—is the outgrowth of his splendid work "Photography and the American Scene."

* * * * *

Dick Sarno—photo director for Hearst publications—is a member of a famous photographic family. He has five brothers who followed in his footsteps. His younger brother is with the New York *Mirror*, three are at Westchester with the Macy chain, and one is with the *American Weekly* shooting color as well as acting as photo chief. Dick began as a news photographer when he was 15 years of age with Underwood and Underwood. In 1924 he went to the *Daily Mirror* where he organized a photographic staff of 15 men. During the war he trained camera men and developed a special unit to photograph the Big Three conferences. Dick's advice to young cameramen is "that it isn't easy to break into a big-time job." The *Mirror*, *Journal*, and *News*, he pointed out, have a long waiting list of aspiring staff men.

* * * * *

Joe Rosenthal, now staff photographer on the San Francisco *Call Bulletin*, was a recent visitor at the School of Journalism, University of Missouri. Joe, maker of the famous flag raising picture on Mt. Suribachi, gives his honors like a true gentleman. "It was a fortunate picture," he modestly says, "which comes once in a lifetime." Factors which made this, the most reproduced picture of all time, Joe

says, were (1) the wind was in the right direction; (2) the men were forced to strain a bit in raising the heavy pole; (3) the shortly-before-noon lighting, and (4) the peak action. For the empty-umpteenth time Rosenthal told questioners that the picture was not posed—that it could not possibly have been posed so perfectly. He also reiterated that his shot did not portray the first flag to go up on Suribachi. It replaced a smaller one which had been raised 40 minutes earlier. Joe's talk at the University, significantly enough, was made December 7, the Pearl Harbor anniversary.

* * * * *

Photographers who want to know what pictures can do will learn much in taking a look at "Science Illustrated." This publication, under the direction of John R. Whiting, APSA, is really "going places." Whiting is proving the premise of his splendid book that "Photography is a Language." John, formerly editor of "Popular Photography," is chairman of the advisory council of Kappa Alpha Mu, national honorary fraternity—devoted to photo-journalism.

* * * * *

Among columnists who constantly "plug" the work of newspaper and magazine photographers are Mable Scacheri and Jacob Deschin, APSA, who never fail to say a good word for the "craft" when given the opportunity. Bruce Downes, formerly an editor with "Popular Photography," and now picture editor of "Colliers," is another who has contributed much to the progress of photo-journalism.

* * * * *

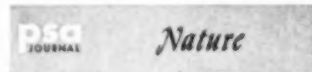
One of the finest things about PSA Conventions is that we have an opportunity to meet and talk with "photographic greats." I'll never forget the wonderful two-hour visit I had with Roy Stryker, a speaker at the Oklahoma City Convention, while he was waiting for a plane to carry him back to New York. Not one to remain idle for any length of time, Roy suggested a walk. Where did we go? To the bus station, to a second hand store, to Sears, Roebuck and Montgomery Ward... to the section of town across the tracks. Roy wanted fresh air and exercise, but even more than this he wanted to see people—to talk to them—to learn whether they were friendly or otherwise. He asked one fellow, a street sweeper, "Where's the coliseum?" All the time Stryker knew the building was only a block or so away. That walk with Roy Stryker was enlightening indeed. It revealed his deep insight into humanity and proved, as nothing else could, why Roy Stryker's photographers are among the great documentarians of our time.

Roy, who has been in Louisiana recently, has had a hand in the filming of Robert Flaherty's "Louisiana Story," a documentary movie which the famous Flaherty made for Standard Oil of New Jersey.

* * * * *

Photo-Journalism is a key to a profitable newspaper, William H. Roberts, advertising

copyrighter with Eastman Kodak Co., told members of the National Editorial Association at their Chicago convention last fall. "In presentation," Roberts said, "... pictures as ready-to-wear, concrete visualization makes the news more readily understood." Pictures in the weekly press, Roberts pointed out, have many advantages. Among them: 1. Pictures, (on a space basis) cost no more, and many times less, than type. 2. Pictures get increased eye traffic and more intense readership. 3. Sale of pictures which have appeared in print provides a supplementary income. 4. Pictures increase good will and prestige, reflected in sales of the paper and its advertising space.



BY LOUISE BROMAN JANSON
6252 S. Kedzie Ave., Chicago 29, Ill.

In viewing the material submitted to current nature exhibitions there seems to be a certain amount of confusion in the minds of some as to what the definition of nature should be in relation to photography. At this point could be clarified, they would find pleasure and satisfaction in pursuing this fascinating field.

Nature photography is simply the recording of natural history subjects, using good camera technique, incorporating the fundamentals of pleasing presentation, and at the same time retaining the scientific authenticity of the subject.

Like Alice's magic mirror, a camera lens can become the doorway to a fantastic world—a world of amazing colors, exquisite textures, and strange structures where the bizarre becomes commonplace and the impossible an everyday occurrence.

To photograph the endless variety of subject matter which Nature offers, it is not necessary to journey to far away places. Field trips need be no more distant than the back yard or the tangle of the weed lot, or the pond in the park. Here, the camera can capture the wonder and beauty of plant life, the changing moods of the seasons, and the development of the countless forms of life which exist wherever attention is directed—whether it be the soil underfoot or the atmosphere above.

There is no beginning and no end to the forms in Nature which are available to the discerning worker from the microscopic to the astronomic and no one can intelligently claim that any of the intervening forms is not suitable material, but for exhibition purposes a line of demarcation must be drawn between the pure nature subjects and those which would more properly belong in pictorial exhibitions. Farm scenes, domestic animals, formal flower arrangements, garden views, and landscapes and seascapes which have been printed from two or more negatives do not belong in the nature exhibit. Although still in the development stage the nature exhibit has outgrown the need of using the above mentioned subjects and their strict

exclusion will enable the nature exhibition to become recognized as an activity of cultural benefit to those participating and to the community as well.—LOUIS QUITT

Rhythm

Nature is constantly changing in its eternal effort to adjust itself to new conditions. There are general conditions that are universal, but the changes with which we are acquainted and can most easily understand, are those that take place in our own environment—the changes of weather and of seasons, the changes that take place in our gardens, and in the things that spring up, grow, and mature all about us. Changing in Nature are a necessary part of its plan for the orderly development of its existence.

The subject of rhythm is a very interesting one, but somewhat difficult to understand, because of the extent and complexity of its scope and yet it is one of the fundamentals of the secondary laws of Nature, being secondary only because the primary laws of Nature are those that deal with food, shelter, and reproduction. It is easy to see that without its secondary laws, however, Nature would lose much of its interest. These laws are therefore essential not only to Nature, but especially to man.

It is astonishing into how many different kinds of categories rhythm can be classified. Generally speaking, however, there are but three kinds—visual, aural, and sense rhythms, using the latter in its broad application.

Classifying these, we find that visual rhythms are of three kinds also: rhythms of active motion or dynamic rhythm, such as the waves of the ocean; rhythms of past motion, dynamic because of their associations, such as the ripples in sand or the tracery work left by a waving tuft of grass; and, static rhythms—rhythms that become dynamic only as they resolve themselves through our senses, such as a row of trees or a colonnade.

Aural rhythms are limited to sound waves and these are one of the phenomena of motion. The variety and complexities of aural rhythms are infinite and they become even more complex when associated with visual rhythms. Music rhythms are of the aural and or sense type, but the rhythms that we experience from ocean waves, for instance, can be either aural or visual or a combination of the two.

If we accept the visual and aural rhythms as the more practical rhythms, we can by applying the same reasoning, consider the sense rhythms as those that apply to human emotions and the spirit. It should be clear that sense rhythms do not actually occur in Nature, as sense rhythms, but exist only because of man's acquired or improved sense qualities.

Carrying the subject of rhythms farther, there are the rhythms of space or intervals such as a pattern or a dotted line; the rhythms of time, such as minutes, years, ages, or from event to event as sunrise to sunset; and, the rhythms of spacetime such as the circuit of the earth around the sun. These rhythms take us into the realm of astronomy, higher mathematics, and the

pure sciences, as well as the applied sciences, and include the cycles.

As if the division of rhythms was not already complicated enough, we are taken into an entirely new realm when we consider the rhythms of color, texture, and other similar characteristics.

The fundamental rhythm of Nature is a rhythm of equal intervals. It need not be always on the same level of peaks and valleys however, but can rise in a crescendo

through augmented motion or become reduced in a diminuendo, when the motion lightens or ceases.—L. F. URBAIN

Coming Nature Exhibitions

3rd Michigan, at Cranbrook Institute (Detroit), March 23-Apr. 19. Deadline Mar. 14. Color and monochrome; entry fee \$1.00 in each. Forms from Roger E. Richard, 1832 N. Gully Rd., Dearborn, Mich.

Buffalo at Buffalo Museum of Science, Deadline May 14. Details from Emily Zurbick, Buffalo Museum of Science, Buffalo, New York.



New England

By NEWELL GREEN, APSA
64 Girard Ave., Hartford 5, Conn.

"Collusion, collusion!" went up the cry. That was because the Norton CC, of Worcester, Mass., ran away with the Fall Competition of the New England CCC's Inter-Club Print Contest which was judged by the Worcester Photo Clan. The other clubs wondered if the home town boys sort of got together. However, our scouts, who are infallible, report there is nothing to it. The Norton club had far and away the best entry of the nine which entered and readily deserved the highest total of 75. Nearest to it was the Portland (Me.) CC with 61 and the Boston "Y" CC with 59. The other clubs followed in close order with only the difference of a point or two between them so that aside from the winner, the contest was quite even.

The top scoring individual print was "Sandy" by M. M. Waite, of the Boston "Y" CC, with a score of 23. Second and third with scores of 22 and 19 respectively, were "New England Winter" by H. W. Wagner, APSA, of Norton, and "Serenity" by Bertha Hill, of Melrose (Mass.) CC. The five members of the Photo Clan judging the competition were: Paul Larson, Prof. Carey Melville, Dr. Gleason MacCullough, Carl Lindstrom and Sidney Knowlton, who had charge of the arrangements.

Over 300 members and guests of the Boston Technical Section of PSA gathered recently at M. I. T. where Dr. Harold E. Edgerton, FPSA, demonstrated a new electronic flash which is so brilliant that it simulates the effect of outdoor sunlight indoors. Dr. Edgerton is famous as a pioneer in this field, of course. For this demonstration he used a gas filled tube with a "capacitor" which when "tripped" gives a blinding flash of white light from the terrific discharge of electrons. He predicted that it would replace the flash bulb for color work, since it enables color shots to be made at even faster speeds than are now used on black and whites.

The Program Committee of the Woonsocket (R. I.) CC has instituted a new feature this season because many members felt that the "Monthly Project" of assigned subjects was beyond their scope. Consequently, they have added a "Free for all" exhibition every month, which has

no rules whatsoever. Members are urged to bring in everything from candid to montages, and so far they have. As an added stimulus, these shows are judged, criticized and ribbons awarded to the winners. Woonsocket suggest the idea for any club with those "Print Competition Blues."

Pop Warner, who writes in "The Viewfinder" of the Everett (Mass.) CC, doesn't mind telling one on himself. It's all about how he went to the Lynn Photographic Society to demonstrate Ansco Color, both taking and processing, asked for plain hypo, got acid hypo without realizing it and came up with the sorriest set of transparencies he ever saw. It didn't affect his popularity, though, because he went right back to the same town a month later to give the same demonstration (with plain hypo we trust) before another club, the Greater Lynn CC. He also judged the first color salon of the Boston "Y" CC in December.

The Wells CC, of Boston, tells us of something novel. They are keeping track of the members' cumulative scores in the year's print competition with a huge graph which hangs on the clubroom wall. Good idea if you have a couple of sign painters in the outfit.

Last December might be the balmiest on record, but still the Amherst (Mass.) CC wanted to be prepared. That's why they had H. W. Wagner, APSA, of Worcester, come and talk to them on snow photography. Wag is an old hand at making beautiful snow pictures, as exhibitors of a few years back will remember, and he gave the club many good pointers which came from long experience.

The Meriden (Conn.) CC had a chance to do an unusual thing, thanks to the fact that President Bob Murray has a friend in Carlyle Trevelyan, APSA, noted instructor at a New York photographic school. Mr. Trevelyan offered to let the club send him all the prints from one of the monthly print competitions, after the usual judging and scoring at the meeting. He would give them all his own criticism and return them for the next meeting. Bet they had a big entry that month. A similar arrangement with some well known photographer might be an idea for some of you harried print directors trying to pull a few prints out for the competition.

Frank R. Fraprie, Hon. FPSA, put in one of his rare appearances nowadays as

a speaker when he talked to the Boston CC, with which he has long been affiliated. His subject was, "Ideas on Creating Pictorial Prints," and considering his long standing record as a top exhibitor, nobody could be better qualified to talk on it.

The movie group of the Boston CC, which has been increasing its membership rapidly, held a movie course during the late fall, consisting of five lectures by experienced professionals. Subjects covered included camera mechanics and technique, exposure and composition, continuity and editing, titles and projection. Lecturers included Charles J. Carbonaro, Claus Gelotte, popular Boston photo dealer, and Edward W. Palmer, of the movie department of the New England Telephone Co.



By BLOSSOM CARON, APSA
77 Sunnyside Ave., Westmount, P. Q., Can.

Want to have your negatives develop out of focus, your paper become outdated and your fingers slowly dissolve in paraphenylene diamine hydrochloride? Well, if you were a member of Northwest (Ont.) CC last autumn and did not attend their gigantic cornroast-treasure hunt, any of these things might happen to you. Personally, I do not imagine the threatened jinx was what assured the organizers of a good turnout, it was the thought of the corn or maybe the "enlargers, cameras and boxes of hypo" for prizes. Another of their outings was announced in the form of a card—"Notice—Photographers wanted for Camera Club outing. Apply at post office" etc. They must have fun, that crowd at Port Arthur, and they do good work too, judging by their 9th Annual Salon.

There's conviviality as well at Winnipeg. For 20¢ at the termination of each meeting the members may linger over sandwiches, doughnuts and coffee to discuss their problems—and all this in their fine new quarters too!

Toronto CC is very busy these days, and no wonder, for they are cooperating with the Toronto Anglers and Hunters Association in putting on an exhibit of nature and outdoor photography, the theme being the conservation of natural resources of forest and stream, and prompted by the thought that when shot by a camera our wild life always lives to tell the tale. A nice idea, don't you think? This will run March 18th to 26th. Vic Crich, Gordon White and Rex Frost will be the judges, and prizes will be awarded totalling nearly \$300. The Sports-mens Show is quite a big event here—this year they expect an attendance of around 150,000.

The Club's own double barrelled international salon is slated for March 21st to April 2nd. Yes, they are inviting both colour and monochrome, the slides to be projected during the day at Eaton's Art Gallery and three evenings a week at the Ontario Museum. They are expecting a good response and I hope they get it. While still on the subject of the Toronto

Pictorial Div. Yearbook

ATTENTION of all PSA members is called to the fact that copies of the Pictorial Division Yearbook for 1948 are still available. The price is \$1.00. Write PSA Headquarters, 1815 Spruce St., Philadelphia 3, Penna.

CC we should tell you of the Bertram Room. The club premises are being extended to include this fine reading and sitting room. By the way Anne Pilger Dewey's visit and lecture was a huge success. Invitations to attend were sent to other Toronto clubs as well as to Hamilton and Oshawa. As Rex Frost said, "It was just one of those club nights to be remembered."

The Photo Club of Quebec is full of ambition. They are holding their club show in March and then are planning to hold their first international in June; but more of that nearer the time. Their distinguished member, Jules Brochu, addressed the Photo Club of Montmorency and their former president, Dr. Marcel Langlois, has gone to Ottawa to live. This is a great loss to Quebec but we hope he will find his niche in the photographic circles in the Capital.

In the field of colour another Quebecois has distinguished himself. Louis Lavoie won a PSA award for the best transparency. Dr. J. F. Burgess of Montreal, genial maestro of the fungi, was awarded an honourable mention in the 1st monthly PSA international colour division competition. Those successful in the PSA colour show itself were Mary Owens, May Smyth, Hubert Dell, H. Peteran, Wes Stark, Sam Vogan and Ed Zeller—all of whom are from Ontario except Montrealer Ed Zeller. You're certainly showing us the way, Ontario!

The St. Catherine CC though one of the smallest in our group is also one of the most active. Just imagine having the membership divided into three groups of five, each with its chairman to supervise the making of at least two prints per month per person. That sounds like 30 pictures for print night! Then among other things they have "Photo Tips" issued bi-monthly with a lengthy outline on some special phase of photography.

In Montreal, thanks largely to J. S. Locke, work continues at the military hospitals. Pictures taken of the patients are sent home to their relatives. The war is over but the paraplegics are still there.

Sarnia CC is interested in obtaining PSA Exhibitions in both colour and black and white. Possibly other interested clubs would like to get in touch with them and perhaps work out customs arrangements to their mutual advantage.

Ottawa CC was loaned for an evening prints from the National Gallery—nice going!

Victoria CC intends to have a reform meeting (my name for it, of course) when about 16 suggestions regarding what to do and what not to do at print criticisms

will be discussed. Wish we could be there to add to the confusion or possibly even emerge with some bright ideas.

SOUTH & SOUTHWEST

By H. D. (HEED) OHM, APSA
P.O. Box 351, San Antonio, Texas

C. L. Herald, our Houston correspondent, reports that he is slowly recovering from a quite serious operation. We certainly have missed his regular letters on the doings of the Houston CC, and hope that by the time this goes to print he is again back in his darkroom.

The Houston CC recently had a rare treat when they entertained PSAer Maurice Tabard, of Paris, France, as a guest speaker. M. Tabard was the guest in Houston of Paul Linwood Gittings, FPSA, who introduced him to the club. Tabard, a true purist, displayed a collection of his prints and gave a talk on photography in France. Unknowingly, M. Tabard was talking to one of the most active Control Process groups in the country. The Houston CC has quite a number of members who regularly work in bromoil and gum, making most of their salon prints in one or the other of these mediums.

Gordon C. Albott, FPSA, of Taxco, Mexico, reports that he recovered more rapidly than expected from his hospitalization in Chicago. Gordon went on to New York City from Chicago for a few days of seeing the shows and visiting the art galleries, and then back to sunny Mexico.

Dr. Carrol C. Turner, APSA, of Memphis, Thomas B. Romine, of Fort Worth, and Houston Payne, M. Phot., of Shawnee, will judge the 1949 Seventh International Salon of Photography at Oklahoma City. This show is always a big event in these parts and we wish them the best of luck again this year. They did not hold their regular salon last year inasmuch as the PSA Exhibition, in connection with the Convention, was held in Oklahoma City. The jury secured for this year's judging should assure a top-notch exhibition.

The bromoil class of the Photographic Society of San Antonio is forging right ahead with seven members attending every meeting. Every one of these members have now made acceptable bromoils and are very enthusiastic about the process. A print night with a showing of the members work will be held shortly.



By WILLIAM E. "GENE" CHASE, APSA
4164 Federer St., St. Louis 16, Mo.

At the December meeting of the Photographic Guild of Detroit one of its own members, La Verne Bovair, was the featured speaker. La Verne "gave" with a demonstration on his specialty, table top photography.

J. Elwood Armstrong, APSA, received

the Pictorial Division Medal and he has also been reappointed Representative for the State of Michigan to the Pictorial Division. Earle Brown, Guild President, and Dr. C. J. Marinus, APSA, were elected District Representatives to the PSA National Council.

Not satisfied with taking the Trophy in the PSA 1948 Continental Print Contest, the Guild also won 1st place in the Indianapolis Invitational Club Competition and are now the proud possessors of the Monk Trophy.

The Silhouette CC of Detroit, unique in that their membership is limited to 50, that they meet every month in the year and that members are subject to suspension if they do not submit a print at least once every three months, have elected the following officers for 1949: A. L. Scheer, President; J. Gajda, Vice-President; J. Horvath, Treasurer and V. Lovett, Secretary.

The 3rd Omaha International Salon was judged in Joslyn Art Museum by D. Ward Pease, APSA, Wood "Pops" Whitesell and Edmund Kopietz.

On January 25th the North Platte CC featured a color slide exhibit from Holland and at their February 22nd meeting they will again feature another color slide exhibit, this time from Australia. Visiting PSAers are always welcome at the North Platte CC. They meet the 2nd and 4th Tuesdays of each month in the Northwestern Public Service Bldg.

The Lincoln (Neb.) CC held their Annual Banquet on December 8th and presented their newly elected officers who will serve throughout 1949: Floyd R. Schroeder, President; Dr. H. O. Paulson, Vice-President; Mrs. George Keim, Secretary-Treasurer; H. B. Mully, Corresponding Secretary; Marjorie Barstow, Editor of the "Test Strip"; Amanda Anderson, Historian and Leslie Drake, Salon Director.

Not content with "importing" Nicholas Haz, FPSA, B. Erle Buckley, APSA, and Arthur M. Underwood, FPSA, for programs the Cleveland Photographic Society have scheduled Philip James Croft of Toronto, Canada, for January; Axel Bahnsen, APSA, for February; Mildred Hatry, APSA, for March; Harry K. Shigeta, FPSA, for April and P. H. Oelmann, FPSA, for May. No wonder a person has to go without dinner to get a seat at a CPS meeting.

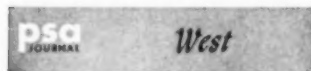
Orchids to Doris Weber of the CPS for the splendid job of editing the Pictorial Division "Yearbook". She is also sponsor of the Austin, Minn., Portfolio CC, an associate member of the Boston CC, a Director of PSA and just recently she won the Three Star Award of Merit of the Pictorial Division.

The Capitol City CC (Springfield, Ill.) recently presented Dr. Louis Tint, of Chicago, Ill., in a lecture illustrated with some of Dr. Tint's color slides entitled "America the Beautiful."

The Edison CC (Chicago, Ill.) have elected the following officers for 1949: John Bahdyin, President; A. H. R. Noreen, Vice-President; Irene O'Neill, Secretary and W. G. Schwantz, Treasurer.

J. P. Wahlman, APSA, the well known tobacco auctioneer of Fort Dearborn CC, has taken upon himself the task of arranging a weekly photographic program at the Hines Veteran's Hospital.

Slide Film of the 1948 Chicago International Salon is now available and can be obtained from Dr. C. F. Cochran, 3946 North Lawndale Ave., Chicago 18, Illinois.



By JACK CANNON
691 Market St., San Francisco, Calif.

Hello again. A late checkup on gifts finds Pinky Arntzen and Elbridge Newhall thanking a Santa Claus named Harris. Mr. H. is a big wheel of the Royal and his wires to the boys announced their being awarded Fellowships and Associates in the order named. Very many congrats—and to others, too, we may not have heard about. Incidentally, what happened to Newhall doesn't happen to the every-day pitcher-snapper. Mr. X. on his trip to London was the guest of Mr. Anthony Peacock at the judging of the Royal Salon. A blinkin' honour, wot? A dish of tea now and again midst the print perusal is not the only innovation our reporter tells us. Each man's prints are scanned as a unit—a decision having been made hitherto stating the maximum one could get accepted. (Or words to that effect.)

Parties over for the most part find CCC's Malcolm Greenberg the No. 1 surprised lad of the bunch. MG attended with whetted appetite but no great expectations of awards (this yearly total slightly less than qualifying). But, in the stretch and finals the old Greenberg punch came thru and our Malcolm took home the lion's share of the hardware. "With my luck I'll never pass up another sweepstakes ticket," says the '48 Wonderman.

A quick "Congrats" to Victoria CC for its Special Salon Issue of the "Close Up", very nice reading and looking. And on the subject of publications, let us mention again that Univ. of California CC has a very swell book. A late issue boasts of members carrying every major from anthropo'ly to zoo'ly. That would put a few journalism majors in there to take over the Editor chores. And it looks like they will ultimately be very fine journalists. Also nice reading.

The following is merely a statement being made in order to ease the conscience. It says here that one must stand and recite these words at regular intervals. These are the words: "WILL YOU DISTRICT REPRESENTATIVES AND CAMERA CLUB PUBLICITY BOYS SEND IN A BIT OF NEWS NOW AND AGAIN . . . OR ARE THINGS AS DEAD AS YOUR ABSENT REPORTS INDICATE?"

Recitation being over we will now be seated.

Photochrome CC of SF comes thru with a neat trophy idea (borrowed from the Hawaii Boys!) . . . nice slide files with engraved name plates and notation of the



award, group, place, etc. The Island Kids used the plate idea riveted to plain old box cameras, said cameras being awards for the now celebrated Box Camera Salon Pix Contest. (By the by . . . Urban Allen can still get your club listed on the schedule for showing these prints . . . write to him % Honolulu Star Bulletin, Hono., T. H.)

So we went hog wild singing the praises of Sierra CC last month, you say . . . and we say "Not loud or long enough. . . ." Sierra CC total on slides for the Vets is well over 700. Get shooting at that record, it can be beaten, you know. To you generous ones who sent slides—thanks—and know that the San Francisco HQ of the American Red Cross has undertaken a distribution program for the Western States. About 1005 slides are being shown in regular scheduled shows starting far north and far south and working the hospitals 'til they finally arrive back in the home office in Central Calif. New slides will be added, poor ones culled out, worn ones replaced, and then finally complete shows retired and new ones started. There will be lots of boys in a bad way for years. The slides we have won't last forever. If you've given one, give another. If you haven't given any . . . well . . . let's go. Sierra CC gave 700—what about your club?

Mike (Old Cabeza Roja) Dale has returned from Texas. He looks relieved. That is beside the point—his high point of the trip and also of Mike Jr. was a ride on a swell little narrow gauge RR somewhere in Ariz or New Mex. The crew was cooperative to a fault—wanted to know if they wanted steam, black smoke and all ten miles per hour at once. It seems they exist for the photo—rail—fan, almost. Another Dale dilly was his Indian reservation yarn. Like many a good tourist he forked over the \$1.00 bite the Big Chief Governor puts on snapshots. So Mike sets up the 8 x 10 view. Along comes Big Chief Pain in the Face with loud noises to the effect: "This buck won't settle for one buck—\$25.00 small fee for big camera." So, our crafty Mike, who isn't one to have an Indian wool blanket pulled over his eyes, says "No interest," and folded up his contraption, just as if he hadn't made the shot already.

This column has to have its Ed Rea story each month. Ed got flud'd out of going to the CalCC Annual Dinner and

Trophy-trading Fest. Prexy Paul Dekar was laying for him with a suitable award for "The Most Conspicuous Lack of Contribution to Photography in '48". The award: a dozen 8 x 10 glass plates . . . outdated years and years and years ago. Dekar claims they were new last time Rea made a picture. Rea claims the award. No argument.

Well—maybe Geo. K. of the North has a little news.

Northwest PSAers are accustomed to almost anything in their informal get-togethers, but something happened at a recent meeting that shocked the most blasé out of their worldliness! Up popped a print titled "Rot-gut," a fiendish thing done by Charles Pearson, of Seattle. Locale of the scene was a curb, at night. Reposing behind a lamp-post was an empty whiskey bottle, and tastefully draped over the curb was Webster calls it viscera! Pearson hastened to explain that the latter was borrowed from a meat packing house. He also related that a prowler car drew nigh while he was making the ghastly exposure, but with one startled glimpse the driver put spurs to his conveyance and madly dashed away! And now the question is on everybody's lips: can such a thing be art, and if not, what is it?

Three new clubs in the Washington Council's rapidly growing family swells the total to 25, with an individual membership of just a shade under 1000. Latest joiners are the Ritzville CC, in Eastern Washington, with Otto Piannekuchen as prexy, A. M. Kendrick, secretary; VMCA CC of Seattle, Osmond G. Butler, secretary; and Koga of Seattle, V. Noma, secretary.

PSAer Harold Christenson, of Mt. Vernon, Wash. not only ran away with the coveted Bremerton trophy at the recent WCCC convention, but also ran off to Arizona with Shirley. Thy latter, naturally, being his bride. The new Mrs. C. is reputed to be, like her husband, a first-class mountain climber, and more than a casual photographer.

Northwest PSA members who may be alarmed over the decision to disband PSA Chapters throughout the United States are advised that meetings will continue, but not as an official function of the PSA. Place is the Seattle Photographic Society quarters at 915 East Pine, Seattle, and time is third Thursday of odd months.

PSA TRADING POST

Open to individual members, free of charge. Limit 25 words each. Copy closes the tenth of the second preceding month before publication.

Wanted—400mm Telyt with or without Reflex housing. Nat Schoen, 321 Main St., Vancouver, Wash.

For Sale or Trade—8x7 Cycle Graphic with extra focal plane shutter back, Turner-Reich 1/6.8 coated convertible Anastigmat 10"-18"-24" focus in Ilex shutter with built-in flash contacts, sole leather case, 3 holders; all fine condition. Frank J. Gill, 18 Seneca St., Oil City, Pa.

For Sale—Perflex 35 Camera, 1/2.8 lens, with case, flash attachment and Morton Magnifier lens. Highest offer. Frank Szymboriski, 422 Wilkinson St., Syracuse 4, N. Y.

For Sale—Retina IIa with Schneider 1/2 lens. One window range-view finder. Case like new. \$165, or will trade for Kine-Exakta. C. Ray Anderson, 2800 Kishwaukee St., Rockford, Ill.

For Sale—3 1/4 x 4 1/4 Autograflex, 15 1/2 bellows with 7 1/2 B&L 1/4.5 Tessar; FPA, leather case. \$150. Accessories: 7 1/2" 1/4 Verito, \$85. 12 1/2 1/8 Voltas, \$85; 18 septum mag, \$15. Lot \$225. F. J. Schmidt, 121 Lagos Ave., San Antonio 9, Texas.

Wanted—Leitz 2 x 2 projector. Also Stereoloy attachment for Leica and Stereo projection accessories. Wm. A. Stark, 734 Ellicott Square, Buffalo, N. Y.

For Sale—Latest Super D Graflex, 3 1/4 x 4 1/4, 1/4.5 coated Ektar, auto diaphragm, flash synchro, used twice. Lists \$245, sell \$195 or trade for similar 4 x 5 Graflex. Rollei Jerry L. Baker, 147-59th St., Niagara Falls, N. Y.

For Sale—Ideal B 9 x 12cm camera. Zeiss 5 1/4" 1/6.8 Tessar. Rimset Compur 1/400. Accessories. Cost \$212.50, price \$125. W. J. Schubert, Camera Club, 121 W. 68th St., New York 23, N. Y.

For Sale—Graflex Series D, coated Tessar lens, septum magazine and FPA. \$125.00. W. C. Watts, Box 49, Ashland, Ky.

For Sale—Miniature Speed Graphic Ektar 1/4.5; Cine Kodak 16mm lenses 1/1.9", 1/4.5 3" and 6". Write for details. Charles C. Vandervort, Laceyville, Pa.

Wanted—4 x 5 color transparencies, flower subjects in particular. Quote price. C. A. Pleadwell, 765 E. Wood St., Flint, Mich.

For Sale—Contax II; 1/2 Sonnar; case, very good. \$195.00. Exakt III A autofocus enlarger. 2 Cassar lenses, 2 1/2 x 3 1/2 \$75.00. Wieck, 2213 Payne, Louisville, Ky.

For Sale—Medalist II, focusing back, three extensions, film holders, flash gun, carrying cases, \$325. Earl W. Sutton, 4302 East E St., Tacoma 4, Wash.

NEWS & NOTES

New Headquarters Fund

In addition to those donors previously listed in PSA JOURNAL the following have contributed to the New Headquarters Fund:

| | |
|----------------------|-------------------------|
| Adams, Mrs. Lois K. | Johnstone, J. C. |
| Anonymous | Jowett, Clinton B. |
| Barnes, Gilbert C. | Klester, Lucille |
| Benson, Isadore | Lamphere, Charles E. |
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| Chick, Howard F. | Smith, Warren W. Jr. |
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| Fox, Jay T., APSA | Thomas, James H., APSA |
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| Goldsmith, Henry C. | Ziesel, Dr. Edward L. |
| Hewes, Robert C. | Long Island Camera Club |
| Hughes, Herbert | Ozarkana Camera Club |
| Hunn, William J. | Vincennes Camera Club |

The goal of the fund is \$5,000.00 of which 649 members have contributed \$3469.58 as of this date.

1949 PSA Elections

In accordance with the provisions of Article VII of the Constitution and By-laws of December 1946, the national officers of this Society and the members of the Board of Directors shall be elected each odd year.

The national officers are: President, First Vice President, Second Vice President, Secretary, and Treasurer.

Three members of the Board of Directors will be elected; and they will represent respectively, the Eastern section of the U. S. (comprising the Eastern Time Zone), the Mid-Western section (comprising the Central Time Zone), and the Pacific section (comprising the combined Mountain and Pacific Time Zones).

All national officers and members of the Board of Directors will be elected for one term of two years; and will assume the duties of office at the first annual meeting of the Board of Directors subsequent to their election.

The present incumbents of the offices of President, Secretary, and Treasurer are not eligible for nomination to the same offices they now hold, because they have served two terms consecutively.

R. Erle Buckley, APSA, of New York City, is chairman of the Nominating Committee and the other members are: E. C. Crockett, FPSA, Chicago; Grant Duggins, FPSA, Sacramento, Cal.; Thomas T. Firth, APSA, Trappe, Md.; and H. Lou Gibson, APSA, Rochester, N. Y.

Any 25 or more members may submit, to the Nominating Committee, a written petition nominating any eligible member for any national elective office, or for membership on the Board of Directors. All petitions properly submitted to the Nominating Committee at least one month in advance of the election date shall be recognized and the names of candidates so nominated shall be placed upon the official ballot. Candidates nominated by petition shall be so indicated.

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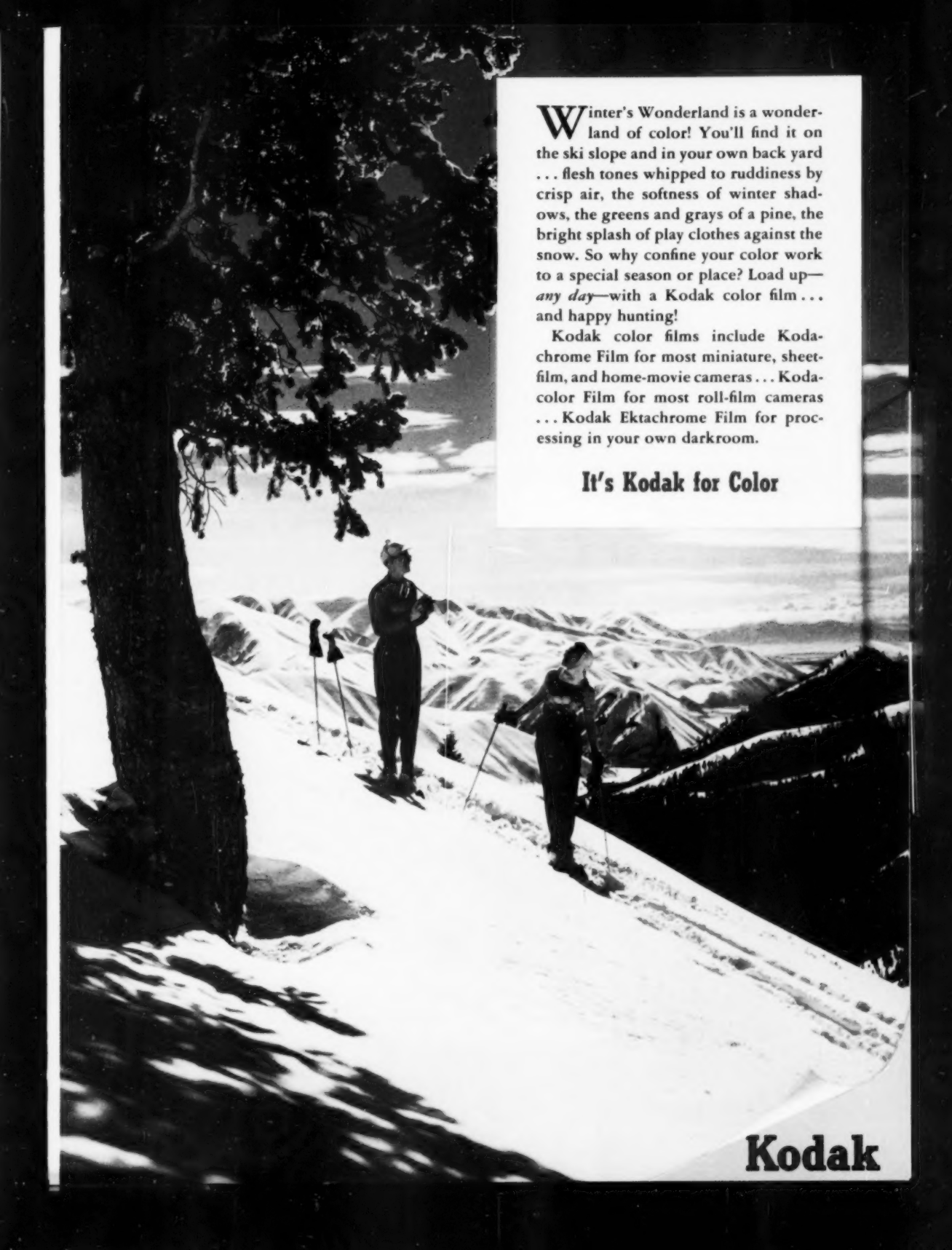
The PSA Board of Directors, by authority of Article VII, Section I of the By-laws, has prescribed the following rules and regulations and has fixed the following dates for the 1949 election:

Brief descriptive data of all nominees, prepared by the Nominating Committee, should be sent out by the Elections Committee on or with the ballots. The data should include the address, occupation, age, length of membership in the Society, and Divisional affiliations.

The Board believes it is desirable, where practical, to nominate more than one candidate for each national office; and feels that it is essential to nominate more candidates than required to fill Directorships.

The 1949 Election Schedule is:

- April 1, 1949**—Deadline for preparation of slate by Nominating Committee.
- April 15**—Deadline for Nominating Committee to submit slate to PSA JOURNAL, for publication in June issue.
- July 1**—Deadline for receipt of Petition Nominations by Nominating Committee.
- July 2**—Deadline for Nominating Committee to submit complete slate to Elections Committee, including Petition Nominations.
- August 1**—**DATE OF ELECTION** Deadline for mailing ballots, prepared by Elections Committee, to membership.
- September 1**—Deadline for receipt of ballots at PSA Headquarters.
- September 9**—Deadline for Elections Committee to complete counting of ballots.



Winter's Wonderland is a wonder-
land of color! You'll find it on
the ski slope and in your own back yard
... flesh tones whipped to ruddiness by
crisp air, the softness of winter shad-
ows, the greens and grays of a pine, the
bright splash of play clothes against the
snow. So why confine your color work
to a special season or place? Load up—
any day—with a Kodak color film ...
and happy hunting!

Kodak color films include Koda-
chrome Film for most miniature, sheet-
film, and home-movie cameras ... Koda-
color Film for most roll-film cameras
... Kodak Ektachrome Film for pro-
cessing in your own darkroom.

It's Kodak for Color

Kodak

BULLETINS

NEWS OF KODAK PLANS AND PRODUCTS

New Book—Chances are you're not a police photographer. Nonetheless, the new Kodak textbook, "Photography In Law Enforcement," belongs in your personal photographic library.

This 112-page book, copiously illustrated, is designed as an introduction to law-enforcement photography for the novice police photographer—and as a reference book to which the experienced worker can turn for advice on specific problems in police photography. It covers the field concisely but thoroughly.

First three chapters of "Photography In Law Enforcement" are devoted to equipment, problems of exposure, and darkroom technique. The rest of the book contains detailed information on photographic identification work, fingerprints, automobile accident photography, homicide, arson, burglary, and the photographic aspects of many other fields of criminal investigation. In addition, special phases, such as infrared and ultraviolet photography, x-ray photography, spectrography, and full-color photography, are covered.

Price of the book, \$2.75.

See your Kodak dealer

KODAK products are sold through Kodak dealers, any of whom will be glad to complete the descriptions of Kodak products which are mentioned in these pages. Usually, too, they will give you opportunity for firsthand inspection of the advertised items.

And in matters of general photographic information your Kodak dealer will be found to be soundly informed.

Stop The Presses—First announcement stories of the Kodalite Table Viewer skipped one of its most interesting optical features—the Kodak Ektalite Field Lens located just behind the black viewing screen. This type of lens, which has concentric ribs from center to edge, was first dreamed up by Augustin Jean Fresnel, a French optical experimenter who died in 1827; but Fresnel

would probably be startled to see the adaptation in the Kodalite Table Viewer—for it's flat as a wafer, and the ribs are as fine as thread, 200 to the inch. Function of the lens is to smooth out the illumination; there's no hot spot on the Kodalite Table Viewer screen anywhere within the normal viewing angle. Only an optical expert could figure out how the image gets through; but anybody—viewing a transparency on the screen—can tell that here's a quality of viewer performance never seen before. If you haven't had the pleasure, take some of your favorite slides down to your Kodak dealer's and let him run them through a Kodalite Table Viewer for you; you're in for quite an experience.

Potent Projector—It's hardly a home movie projector, but if your camera club, church, or lodge is looking for a really fine 16mm. sound-on-film unit, investigate the Sound Kodalite FB-40 Projector. This projector delivers 40 watts of undistorted output, suitable for large assemblies; the sound system can also be used for musical and narrative accompaniment of silent films, or as a public address system. Reel arm capacity is 2000 feet of 16mm. film. Sound system has superior features, such as an oil-coupled flywheel on the sound drum shaft, to assure unvarying pitch of reproduced sound; and the Sound Kodalite "Fidelity Control," which permits accurate focusing of the scanning beam on either surface of the film (thus assuring excellent sound quality with either original or duplicate films). Many other features, too; ask your Kodak dealer. The price, \$855.

YOUR KODAK PRECISION ENLARGER IS MORE THAN A PRINTING DEVICE

MOST enlargers merely make prints. Your Kodak Precision Enlarger and its accessories offer a complete photographic system—for fine enlarging, copying, slide making, preparation of color separation negatives, cine titling, outdoor or studio picture making, close-up work in black-and-white or color...even photomicrography and clinical photography.

There are two models, or basic assemblies. The A Assembly (shown in the darkroom on facing page) is for negatives $2\frac{1}{4} \times 3\frac{1}{4}$ inches and smaller. The B Assembly, at left, is for negatives up to 4×5 or $3\frac{1}{2} \times 5\frac{1}{2}$ inches. Illumination systems of both enlarging heads are designed to suit the type of negative; the Enlarging Head A, for small negatives, has a condenser system, while the Enlarging Head B, for larger negatives, is diffuse. The

same Stand Assembly will accommodate either head.

Lenses are removable and interchangeable, and a wide variety of Kodak Enlarging Ektar and Kodak Enlarging Ektanon Lenses, in focal lengths from 2 inches upward, can be had. These are fine multi-element lenses, Lumenized (hard-coated on all glass-air surfaces) for finer print quality, and specifically computed for short range.

In equipping a permanent darkroom, it is wise to choose a good enlarger. The enlarger and its lens equipment constitute the most essential darkroom tools; their quality or lack of quality shows up in every print you make. Start with a soundly designed, soundly built unit such as the Kodak Precision Enlarger A or B, and you lay the foundation for years of satisfying darkroom operation.

At left, the basic function of the Kodak Precision Enlarger—the making of fine enlargements. Below, a few of the "bonus" uses to which it can be adapted—copying, picture taking, extreme close-up work, photomicrography. This is more than an enlarger; it's the basis for a complete photographic system.



CHECK LIST FOR THE MODERN DARKROOM

THE lean years are past; nearly all the construction materials and photo-lab equipment you've wanted are now plentiful. Now's the time to bid goodbye to makeshifts, and really get down to cases on the darkroom you need. At right is a darkroom plan, laid out for a 6x8-foot space, but readily adaptable to many other proportions and dimensions. Below, a check list of Kodak darkroom aids, to help in your photo-lab planning.

Safelights—It's impossible to operate without them, and Kodak offers a type to fit every need, from the inexpensive Brownie Darkroom Lamp to large, indirect-light models for general room illumination. To fit them, there are reliable Kodak Wratten Safelight Filters, in a type for every popular film and paper.

Trays—Two types, to fit your preferences. Kodak Enameled Trays, gleaming white porcelain on steel, from 4x6 inches up to 23x28. Kodak Hard Rubber Trays, first-quality rubber, impervious to all acid and alkaline solutions, reinforced for maximum life, from 4x6 to 20x24 inches. Either type will give long, satisfying service.

Thermometers—Ample choice here, too. The inexpensive Kodak Darkroom Thermometer, glass-enclosed, reads from 0° to 120° F.; it fills most needs. The metal-backed Kodak Tank and Tray Thermometer, 20° to 150° F., has a pivoted spring clip to hold it in place in the processing bath. The Kodak Stirring Rod Thermometer, 20° to 190° F., combines two darkroom necessities.

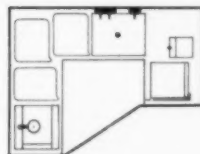
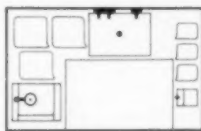
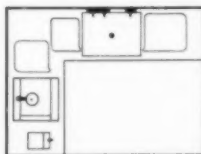
Timers—For film development, choose the Kodak Timer With Tilting Base. This spring-wind alarm type is also excellent to time fixing, washing, and long exposures. For automatic exposure timing of enlargements or contact prints, choose the Kodak Electric Time Control.

Graduates—Accurate measurement of liquids is essential. Equip yourself with the new, inexpensive Kodak Darkroom Graduates—in a size range to fit your operating needs—or the handsome pedestal-base Kodak Engraved Graduates, accurately molded of the finest quality glass.

Funnels—The modestly priced two-part Kodak Combination Funnel serves every pouring need—for small or large quantities, into wide-mouthed jars or narrow-necked bottles. Set this down as an absolute necessity for tidy darkroom operation.

Contact Printing—If you do a good bit of contact printing, it will be worth your while to have a Kodak All-Metal Printer, Model 3, which accepts negatives up to 4x5½ inches, and paper up to 5x7. This is a compact, efficient die-cast aluminum unit; it has unusually even illumination, independent margin masks, scales in 1/16-inch steps, paper-

This compact darkroom can be built wherever it is convenient to enclose a corner, supply hot and cold water, a drain, and electricity. Construction notes and recommendations: Floor plan 6x8 feet (basic and alternate arrangements below). Counters 36 inches high, 26 inches wide, covered with linoleum. Sink, metal or cypress. Upper shelf 9



locating guide, special guides for strip printing on 35mm. film or paper, and a sure-contact platen lined with foam rubber and felt. For occasional contact printing, the Kodak Auto-Mask Printing Frame (for negatives to 4x5½ inches) offers an inexpensive and serviceable compromise.

Enlarging—To go with your enlarger, a good easel is essential. The Kodak Metal Enlarging Easel 8x10 is sturdy and compact; permits image size to 7½x9½ on 8x10-inch paper. The Kodak Enlarging Easel 11x14 is known for the accuracy of its masking and convenience of use; it offers a choice of margin widths, and print sizes up to 11x14 (standard exhibition size). The Kodak Enlarging Easel 17x20 is a professional-level unit with spring-balanced arms adjustable for margins from ½ to 2½ inches, on prints up to 17x20.

The Footswitch—A foot-operated switch for the enlarger may seem a luxury, but dodging a fine print often requires both hands. Those who've used a foot switch want never to be without one—and the Kodak Utility Foot-switch, compact, rugged, and modest in cost, is an ideal selection.

Washing—Hang a Kodak Automatic Tray Siphon on the rim of a large tray, connect the rubber adapter to the faucet of your darkroom sink—and you have a first-class print washer at a minimum cost. Directional

inches wide, 60 inches from floor. Below the right-hand counter are muslin-covered wooden frames, sliding like drawers, for print drying. Under the left-hand counter, grooves and compartments for trays and ferrotype tins. Liquid chemicals below; dry chemicals and sensitized materials on upper shelf. Lifting paper drawer under enlarger.

force of the water stream keeps prints separated and gently moving; when water has circled the tray, the siphon sucks it out into the sink. Neat, and automatic.

Print Drying—Sure, there are muslin drying frames in the darkroom picture above. But sometimes we don't get around to the making of such frames; we may prefer to use a Kodak Photo Blotter Roll; there's one sticking out of the cabinet at lower left. The roll is made of fine white blotter, a cloth lining, and a corrugated card backing for ventilation; it's six feet long, 11½ inches wide, and holds 60 average-size prints.

For glossies, use Kodak Ferrotype Plates (round-cornered, metal, with high-gloss black enamel, 10x14, 14x20, and 18x24 inches). Polish the plates first with a drop or two of Kodak Ferrotype Plate Polish, and roll the prints down with a Kodak Double Print Roller, Flexo Print Roller, or Kodak Professional Print Roller.

Print Trimming—Eventually, every good darkroom needs a good print trimmer. For all-around satisfaction, select the generously sized Kodak Senior Trimmer No. 5, which is 15 inches wide, with a 15-inch shearing blade of fine steel, and a heavy cast base supporting a solid hardwood bed accurately grooved in ½-inch squares. It's a trimmer to give you years of honest service.

Prices subject to change without notice.

Kodak

*Finest lens in the 2¼ x 3¼ field
and your pictures prove it!*

It's the Kodak Ektar Lens, 100mm. *f*/3.5, employing Kodak's rare-element glass. All glass-air surfaces *Lumenized*, lens critically corrected for definition and purity of color. 1/400 Kodak Supermatic Shutter synchronized for F or M flash bulbs or Kodatron Speedlamp. The camera, \$270 plus tax. Flashholder, \$9.50 plus tax. At Kodak dealers' . . .
Eastman Kodak Company, Rochester 4, N. Y.



"Magazine-cover" quality
... The over-all crispness, sharp definition, richness of color in this Kodak Ektachrome shot ... it's all there because your Kodak Medalist II Camera has a gem of a lens.



Action in color ... Just load with Kodacolor Film and shoot. Count on your Kodak Medalist II Camera with its sharp, speedy Kodak Ektar Lens and precise Kodak Supermatic Shutter to get the picture.



Kodak Medalist II Camera

Great depth of field ... the texture of foreground building and snow, the subtlety of color in shadows, combined with exquisite background detail. It "comes easy" with the critical correction and short focal length of the superb lens.

Kodak

Prices subject to change without notice

"Kodak" is a trade-mark

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Photographic Society of America

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A Traveling Show of 42 prints has been selected from the Technical Exhibit of the 1948 PSA Exhibition of Photography, which was held in Cincinnati, Ohio, November 3-21.

There are in this exhibit a number of excellent photographs of the tracks of nuclear particles in photographic emulsions prepared by the Kodak Research Laboratories. The Ballistic Research Laboratories of Aberdeen Proving Ground submitted some very startling spark photographs and Schlieren photographs showing shock waves and flow patterns over models of bombs and missiles. There are also a number of autoradiographs, electron micrographs, electron diffraction patterns and color photomicrographs.

Further information on the availability of this exhibit for showing can be obtained from Mr. E. R. Clark, Chairman Exhibitions Committee, 184 Malden Street, Rochester 13, New York.

The Executive Committee of the Technical Division held a well-attended meeting on Friday, January 21, in the Lighting Institute at Nela Park, Cleveland, Ohio.

The story of Xerography is "getting around." The Rochester Technical Section featured a description and demonstration of the process at its November 21 meeting; Cleveland had it in January; and the New York Section presented it before more than 800 on January 4.

Xerography is a new dry, electrostatic process of graphic reproduction and picture-taking recently announced by the Haloid Company of Rochester. Inventor of the process is Chester F. Carlson, a New York physicist and patent attorney. The Haloid Company has acquired the rights to use and license the process.

The demonstration usually is conducted by Dr. John Dessauer, Haloid's director of research, and Joseph C. Wilson, president of Haloid.

In the demonstration reproductions of engineering drawings and letters are produced by contact and projection printing

and a portrait of a living subject is completed in less than a minute without chemicals, fumes, negatives or sensitized paper.

Boston Section

Boston has offered varied subject matter in its monthly meetings. For example:

William Cushman, instructor in color theory and harmony at Vesper George School of Art, discussed "Color and Color Composition in Photographs" from an artist's point of view on October 27; Professor Harold Edgerton, FPSA, Massachusetts Institute of Technology, talked about "The Use of High-Speed Flash Lamps in Color Photography" on November 18, demonstrating a speed lamp for photographing fact action and multi-flash equipment for photographing ballet dancing; and Dr. Edwin H. Land, Polaroid Corp., speaking December 15 on "Some Technical and Functional Applications of the One-Step Photographic Process."

Binghamton Section

Program directors may get some ideas also from the Binghamton meetings.

Thomas G. O'Leary of Corning Glass Works, Corning, N. Y., described photosensitive glass, a new Corning product, at the October 20 meeting; Dr. Frank A. Hamm, Central Research Laboratory, General Aniline & Film Corp., Easton, Pa., discussed the electron microscope on November 3; and a Graphic Arts session took place December 15.

Speakers at the last-named session were: Philip Mikoda of Ansco Education Department, on "Production of an Ansco Color Transparency for Reproduction"; Charles Austin, Ansco Graphic Arts Sales Manager, on "Processes for Graphic Arts." Two sound color movies were shown: "How To Make A Good Impression" by Harris-Seybold-Potter, and "Modern Photo Engraving" by Eastman Kodak.

Cleveland Section

Lloyd E. Varden, FPSA, technical director of Pavelle Color, appealed alike to technical people, pictorialists, and general photographers at an early fall meeting when he discussed photo-sensitive systems.

In his talk he also pointed out that "The eye needs a leading line to get into the picture." "The eye travels in a circular path through the picture," and "Bright spots near the edge of the picture are distracting" have been traditional criteria for judging prints.

By means of a device which records the movements of the eye, he says, it has been possible to determine the exact order in which a person examines various parts of a picture. Eye movements have been recorded for different types of observers with a variety of picture material. The

items which catch the eye first, and the movement of the eye through the picture have been found to be widely different from that which we might suppose or from that maintained by pictorialists and artists.

Since the observable facts do not confirm the usual basis for print judgment, Mr. Varden suggested that photographers should develop a new approach to their work and disregard criteria based only on tradition.

In November, Cleveland heard Professor Hoyt L. Sherman, of Ohio State University, on "Visualization of Images."

New York Section

David J. Eisendrath, Jr. reviewed new developments in photography in December. He mentioned a new Du Pont black-and-white film with an approximate ASA rating of 400 for daylight and about 200 for incandescent illumination, the new Foton camera by Bell & Howell, and the Polaroid Company's One-Step camera, developed by Dr. Edwin Land.

He also discussed and demonstrated the new General Radio light meter, developed by Dr. Harold E. Edgerton, of MIT. For the first time a light measuring instrument has become available for the measurement of flash and speedlight illumination. This meter does not indicate exposure directly but must be calibrated by the user in relation to his own equipment. Normally, this instrument is placed in the subject position like a conventional incident light exposure meter. However, it may also be equipped with an extendable "foot" which is secured to the ground glass screen of the camera used, so that the intensity of light reflected to the focal plane may be measured and read.

Rochester Section

A year of cooperation with the University of Rochester in its first course on photographic theory has been completed. The course was planned by a committee comprising Rochester Section, University of Rochester, and Rochester Institute of Technology personnel. Its purpose was to fill a void in a city which has much to offer in photographic techniques but which has in the past offered nothing in theory leading up to the use of techniques. The course, offered in the evening, was well attended. Possible expansion of the idea is being discussed currently.

The Rochester Section also is cooperating with a citywide committee initiated by the city's museum service. The committee last year sponsored a program called "Excursions in Science." It consisted of Saturday programs for high school students. Each program was built around a subject of scientific interest. The Rochester Section sponsored a program featuring photography as a tool of science.

Rapid Processing of Films and Papers*

By J. I. CRABTREE, FPSA

Summary—By the use of superhardened emulsions, it is possible to process films and papers satisfactorily within a few seconds as compared to the usually recommended times of 5 to 10 minutes for negative materials, and 30 to 45 seconds for papers at the standard temperature of 68° F.

Rapidity of action is accomplished by (a) use of elevated temperatures, namely, 125° to 150° F. for the developer, fixer, and wash water, (b) optimum agitation by spray application of the solutions and wash water, and (c) drying by contact with a heated surface or by jets of hot air. Photographic quality is comparable to that obtained at 68° F.

The rapid processing technique has been adopted for the production of records for television and for race timing. Its application to all branches of photography may ultimately be realized.

The term "rapid" as applied to photographic processing is merely relative with reference to the usual times of processing at the A.S.A. standard temperature of 68° F., namely, about 5 to 10 minutes for negative materials, and 30 to 60 seconds for photographic papers.

Any procedure which reduces these times appreciably as, for example, by a factor of 10 or more, can be termed "rapid" and, when the factor increases to 50 or more, the process may be termed "ultrarapid."

Methods for the rapid processing of sheet films and papers have been published by the author and his co-workers¹ involving the use of highly alkaline concentrated developers in combination with fixing baths containing ammonium thiosulfate at temperatures up to 80° F. Higher temperatures were not possible, in view of the inability of the emulsions to withstand softening and reticulation at the elevated temperatures. The present paper traces the evolution of present rapid and ultrarapid processing methods with superhardened emulsions at temperatures ranging from 90° to 135° F.

As early as 1928, E. Belin (British Patent No. 29946) applied warm developing and fixing solutions by means of jets, while Goldberg² processed oscillograph records in 15 seconds using a thin, hardened emulsion.

The firm, Fernseh G.m.b.H., in Berlin, during the years 1932 to 1939, built equipment consisting of a combination of a camera for photographing a television screen onto motion-picture film, and an apparatus for processing the film coupled with a motion-picture projector.³ A mobile unit was arranged on a truck, the processing

times being as follows: Development, 5 seconds; stop bath, 2.5 seconds; fixing, 15 seconds; washing, 25 seconds; drying, 43 seconds. A larger stationary unit of similar construction was also available. In 1947, A. R. Burkin, Ilford Limited, London, described a method of ultrarapid processing of photographic materials whereby prehardened film could be processed in 6 to 15 seconds and unhardened film in about 30 seconds.⁴

In the United States, however, within the knowledge of the author, the first commercial use of processing solutions at high temperatures was in the race-timing camera constructed in 1935 by the Eastman Kodak Company for the Electrical Research Products, Inc.⁵ After exposure, the 16-mm film was progressed through adjacent tanks containing Kodak D-88 Developer and an ammonium thiosulfate fixing bath at a temperature of 85° F., the total processing time being 30 seconds. The image was enlarged by projection through the film while in the fixing bath.

Stimulated by the work of Goldberg, C. E. Ives, of these Laboratories, worked from 1933 to 1937 with Kodalith film, which is a relatively slow emulsion but is superhardened so that the emulsion coating does not soften even in boiling water. Using the highly alkaline Kodak D-9 Developer, he obtained satisfactory development in one-half second at 150° F. Fixing was accomplished in one-half second at 140° F. in a saturated solution of potassium cyanide. Using the less toxic ammonium thiocyanate, he achieved a clearing time of one-half second in a solution containing 15 grams of the salt to 5 cc. of water. The solution solidified at room temperature.

He then devised a simple processing apparatus (shown in Figure 1) consisting of a jacketed metal tube 24 inches long separated into three compartments by means of sponge rubber plugs held in place by friction with the tube wall. Two of the compartments thus formed were filled with developer and fixing bath through pipe connections which passed through the water jackets. Each of these compartments was 8 to 9 inches long, with an empty compartment about 1/2 inch long between them. The device was assembled with a leader film passing in a straight line from one compartment to the next through knife cuts in the sponge rubber plugs. The exposed film was then attached to the leader and drawn through the baths at a speed of about 100 feet per minute by rubber drive rollers. Development was not uniform across the width of the film, owing to inadequate agitation, and some decomposition of the thiocyanate occurred at the high temperature, resulting in the evolution of poisonous gases.

The Kodalith emulsion used in the above experiments is of very low speed in comparison with standard high-speed negative emulsions and, until recently, emulsion makers were not able to harden the faster emulsions sufficiently to withstand temperatures appreciably above 80° F. without seriously impairing the photographic prop-

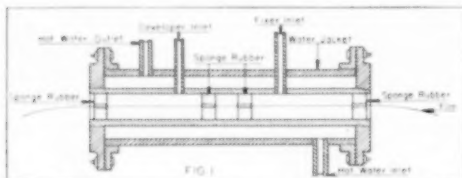


FIG. 1. Apparatus for the rapid processing of film. Note the straight-line path of the film. The solutions are retained by rubber plugs with horizontal slits through which the film passes.

* Communication No. 1233 from the Kodak Research Laboratories. Presented before the PSA Convention, Cincinnati, Ohio, November 4, 1948.

erties. It should be emphasized that, even at the present time, it is not possible to make commercially satisfactory high-speed negative emulsions hardened so as to permit processing at very high temperatures, although progress is being made.

High-speed emulsions with some degree of additional hardening had been made for use in the race-timing camera but the first use of moderately hardened high-speed negative emulsions at a relatively high temperature (95° F.) was in 1936 by Douglas Harvey in collaboration with H. D. Russell and the author, in connection with the rapid processing of films exposed in a submarine. The emulsions were prepared by the Emulsion Research Department of the Eastman Kodak Company and exposed in a camera fitted with a special back whereby a strip of 35-mm film $4\frac{1}{2}$ inches long was pushed into a removable chamber and then cut off from the rest of the roll. The film stayed in the chamber during processing, which was accomplished in a small box with three tanks containing the processing solutions, shown in Figure 2. The film was developed in Kodak D-82 (plus caustic) for 10 seconds at 90° F., fixed in an ammonium thiosulfate fixing bath for 10 seconds at 90° F., and then rinsed and viewed in the wet condition.

With the availability of certain hardened emulsions, F. Brown, L. L. Blackmer, and C. J. Kunz⁶ constructed a device (shown in Fig. 3) known as the P41 * Recorder for the rapid processing in 15 seconds of film exposed to the face of the cathode-ray tube in a radar set. A single sweep of the cathode-ray tube was reduced to a $\frac{1}{4}$ -inch diameter image on Eastman Type 5302 Fine Grain Release Positive film and this image processed by the application of Kodak D-82 (plus caustic) followed by the Kodak Rapid Liquid Fixer with Hardener, both at 135° F. The solutions were applied in a special processing cup which restricted the liquids to a small circular area on the film, and the spent solutions were quickly removed by a vacuum line and the image then indexed into the projection system where an air pressure gate completed drying during projection. After fixation, the film was rinsed with developer containing ethylene glycol to prevent crystallization of the developer on the unwashed film after drying. Development required about 4 seconds, fixing 6 seconds, and washing 1 second, the remainder of the time being consumed in removing the solutions, drying, and moving the film.

The next step in the evolution of rapid processing technique was the construction by Kunz and Ives of a compact 16-mm processing machine shown in Figure 4. In this the film passed through tanks of developer and fixer, was washed by spraying and, after squeegeeing, was dried by passing over heated drums. With processing solutions similar to those used in the P41 Recorder above, the time of processing, including drying (15 seconds), was 35 seconds at 135° F. for Eastman Fine Grain Positive Film. Both the developer and fixer were replenished with the original solutions at the rate of 15 cc. per minute per 8 feet of 16-mm film.

The above method has been extended to the processing of 35-mm film, Types 5302[†] and 5373,** with the equip-

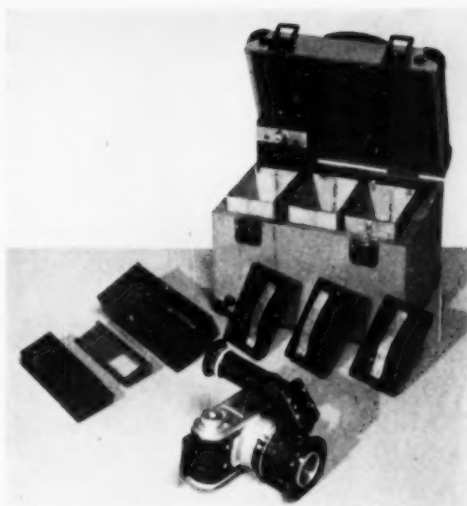


FIG. 2. Rapid processing equipment for still camera. After exposure, the film is passed into a holder, which is light-tight but permeable to solutions, and is then processed while in the holder at 95° F.

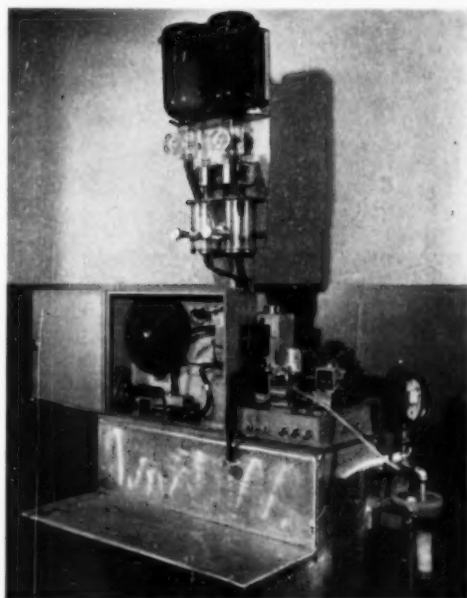


FIG. 3. Apparatus for the simultaneous rapid processing and projection of small images on film.

ment shown in Figure 5. The film passes successively through spraying chambers which apply developer, fixing bath, and wash water, respectively, at 130° F., the film being finally air squeegeed and dried by jets of hot air applied at numerous points as the film passes around

* Plan Position Photographic Projector.

† Type 5302 Eastman Fine Grain Release Positive.

** Type 5373 Eastman Fine Grain Sound Recording, Type R.

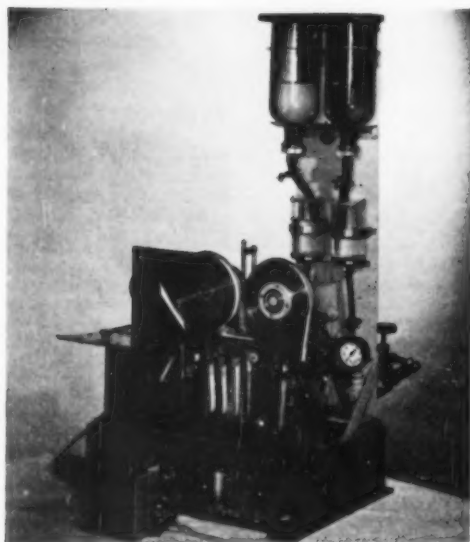


FIG. 4. Machine for rapid processing of 16-mm film.

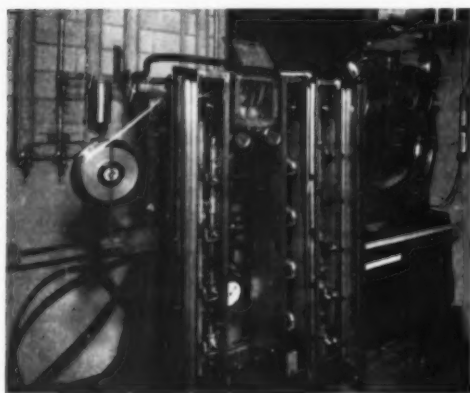


FIG. 5. Machine for rapid processing of 35-mm film.

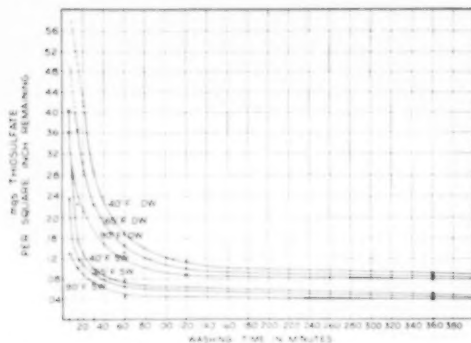


FIG. 6. Effect of temperature on rate of washing of prints.

the periphery of the "bicycle" wheel. Processing solutions and times are very similar to those used in the 16-mm machine. With a washing time of only 10 seconds at 130° F., film of "archival" quality was obtained, with a residual hypo content not greater than 0.005 milligram per square inch.

It might be considered that the spraying operation would rapidly oxidize the highly alkaline D-8 Developer but, since the spraying chambers are gasketed and the developer solution is recirculated, thereby constituting a closed system, deterioration of the developer by oxidation is negligible.

The developer is carried out at the rate of 3 cc. per foot but the volume is maintained by replenishment with the normal developer. The fixing bath is likewise replenished but at one-half the rate of the developer. The volume of water employed is 1.5 gallons per minute per 100 feet, which is somewhat less than is required in the usual cascade system at normal temperatures.

Times of processing are: developer, 5 seconds; fixing, 10 seconds; washing, 10 seconds; drying, 5 seconds; making a total of 30 seconds.

Equipments similar to the above for processing 16- and 35-mm films have been constructed by motion-picture laboratories and television stations. The Paramount Pictures Inc. has installed rapid processing equipment adjacent to the projector in a motion-picture theater whereby a televised image is photographed onto film which is then immediately processed and transferred, without interruption, to the projector.

Factors Affecting Rate of Processing

1. *Nature of the Emulsion.* The time required to develop an image to a desired contrast in a given developer varies with the nature of the emulsion and the thickness of the emulsion layer. Likewise, the time required to fix out the silver halide in a given fixing bath varies with the nature and state of division of the emulsion grains and the coating thickness. In general, the rate of development is not necessarily greater with fine-grained emulsions but, for rapidity of processing, the emulsion layer should be as thin as possible and contain a minimum of silver iodide which fixes much more slowly than silver bromide or silver chloride.

2. *Nature of Developer.* In general, rapid-acting developers contain a high concentration of developing agent and of alkali and have a pH value not less than pH = 10.5. In spite of extended searches for new developing agents, none has excelled the well-known hydroquinone and monomethyl-*p*-aminophenol sulfate (Elo).

The use of caustic alkalis is necessary to secure the high pH values necessary for high activity but the optimum concentration in any given formula cannot be predicted and must be determined by trial.

The nature and concentration of antifoggant is, of course, important in high-temperature work, the most useful compounds being benzotriazole, methyl benzotriazole, and 6-nitrobenzimidazole nitrate. In terms of image-fog relationship, at the optimum concentration of antifoggant, in general there is little to choose between the three compounds although, in specific cases, the methyl benzotriazole may have advantages.

3. *Nature of the Fixing Bath.* With sodium thiosulfate fixing baths, the practical optimum concentration of hypo is from 40 to 50 per cent. By the addition of 5% ammonium chloride or ammonium sulfate to a 25% sodium thiosulfate bath, the rate of fixation with some slow fixing emulsions may be increased as much as 50 per cent but the effect with many fine-grained emulsions is much less.

Ammonium thiosulfate is the most satisfactory fixing agent for rapid work, a suitable concentration being a 15% solution. The rate is increased only about 20% by doubling the concentration to 30%.

Sodium (potassium) cyanide is an extremely rapid fixing agent but its high toxicity precludes its commercial use. Ammonium thiocyanate lies intermediate in rate of action between hypo and cyanide.

The rate of fixation of a 15% ammonium thiosulfate bath at 125° F. can approximately be tripled by adding 500 grams per liter of ammonium thiocyanate. The latter substance, however, tends to soften the gelatin emulsion so that its use at 125° F. is possible only if the emulsion hardness is adequate to withstand the treatment.

4. *Temperature of Developer.* In general, the rate of development increases by a factor of 2 for each 15° F. rise in temperature, and this rule generally applies up to a temperature of 125° F., at which temperature the rate of development is from 8 to 10 times that of 68° F. There is a limit, however, to the permissible extent of temperature rise because of the rapid growth of fog which must be offset by the addition of antifoggants, such as benzotriazole or 6-nitrobenzimidazole nitrate, which, in turn, slow down the rate of development.

At temperatures above 125° F., the increase in rate of development resulting from rise in temperature is offset by the restraining action of the antifoggant and a state of equilibrium tends to be reached. With existing emulsions, therefore, it is of little advantage to exceed this temperature. The temperature-time factor is complicated in some cases by changes in curve shape, emulsion speed, or both, making it important to specify whether development to equal gammas or equal densities for the same exposure is implied in determining the increase in development rate. In some cases elevation of temperature along with the change to a more active developer increases development rate as much as 50 times.

Temperature also affects the rate of fixation, the rate at 125° F. being approximately 3 times that at 70° F.

Since acid fixing baths tend to sulfurize with rise of temperature, excessive temperatures appreciably shorten the keeping life.

The important effect of temperature on the rate of elimination of hypo from films and prints by washing has been dealt with in a previous paper.⁷ The effect of temperature of the wash water on the rate of elimination of hypo from single- and double-weight prints is shown in Figure 6, from which it is seen that, for short times of washing, temperature has a great effect but this is much less with longer times of washing.

With films, the coefficient of washing is approximately the same as for the degree of development, namely, a factor of 2 for each temperature rise of 15° F. At 125° F., therefore, the rate of washing is about 10 times as rapid as at 68° F., assuming that no mordanting of the hypo due to alum hardening has occurred.

5. *Degree of Agitation of Solutions.* Rapid-acting developers and fixing baths are so constituted as to have large exhaustion capacity, so that rapid renewal of the solution at the emulsion surface has less effect on rate of action than with weaker processing solutions. In order to secure uniformity of development in a relatively short time, it is necessary in any case to employ vigorous and uniform agitation and this is best accomplished by application of the processing solutions in the form of a spray or jet impinging on the emulsion surface. The increase in rate of reaction effected by spray application is perhaps not as great as is generally supposed, since moderate agitation will produce about 80% as great velocity as good spray application.

6. *Rate of Drying.* The time required for drying varies with the quantity of water in the material so that maximum rate is assured by the use of thin emulsion layers and by insuring that the layer does not swell appreciably during processing. The hardening requirements for high-temperature processing, however, insure a minimum of swelling of the gelatin coating.

Since the time of drying is also determined by the time required for the removal of loose or absorbed water until only that remains which corresponds to equilibrium with the surrounding atmosphere, it is important that water be removed from all parts of the film or paper at a uniform rate. It is necessary, therefore, in the first place to remove all surface water and droplets with wipers, or air squeegees, or a combination of the two.

Removal of absorbed water has been accomplished most rapidly by the impingement of jets of heated air at frequent locations along the surface of the material combined with radiant heat from heated wires or an infrared source.

Rate of drying is greatly increased by rise of temperature and by lowering the relative humidity of the drying air which automatically occurs as the temperature is raised. The following table illustrates how the relative humidity and drying time drop as the temperature of air of a given initial humidity is raised.

TABLE I

| Temperature of Drying | Relative Humidity of Drying | Drying Time as a Percentage of the Drying Time at 100° F., 90% R.H. |
|-----------------------|-----------------------------|---|
| Air | Air | |
| 100° F. | 90% | 100% |
| 109° F. | 67% | 67% |
| 125° F. | 44% | 25% |
| 163° F. | 17% | 10% |

Adequately hardened film can be safely dried with warm air at temperatures exceeding 150° F. without danger of softening or reticulation, while experience has shown that the physical characteristics of the film base are usually not impaired.

Methods of Hardening in Processing

In order to withstand the softening effect of processing solutions at high temperatures, it is necessary to harden the gelatin permanently, either during manufacture or at some stage of the processing, in order to permit subsequent washing in hot water.

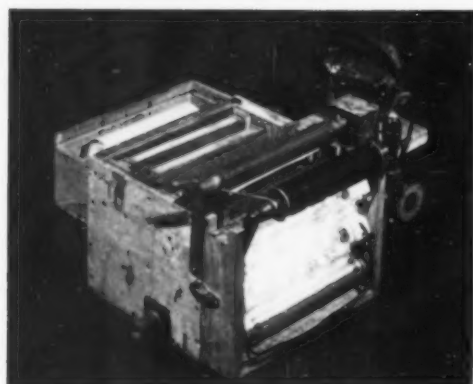


FIG. 7. Machine for rapid processing of paper in rolls.

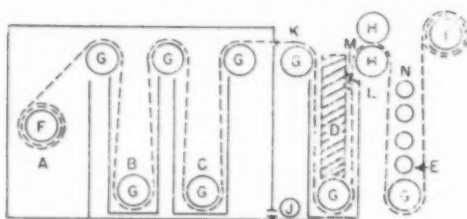


FIG. 8. Sectional view of machine illustrated in Figure 7. A. Unprocessed paper compartment. B. Developer tank. C. Hypo tank. D. Wash tank. E. Drying section. F. Roll of unprocessed paper. G. Guide rollers. H. Wringer rollers and drive rollers. I. Take-up roller. J. Drain. K. Rubber squeegee and light-trap. L. Rubber squeegee. M. Water inlet. N. Heater lamps; 250-watt 12-inch tubular lamps.

The use of a rehardener⁸ is entirely satisfactory, permitting subsequent development of high-speed negative films at temperatures up to 125° F., but the hardening procedure requires time and some softening of the gelatin may occur before adequate hardening is accomplished. For moderately rapid processing, however, this procedure is the most satisfactory since it is applicable to all existing photographic materials.

Some degree of success has been obtained by incorporating a hardening agent, such as formaldehyde, in the developer and, although such hardening developers work satisfactorily at temperatures up to 90° F., at higher temperatures the rate of hardening is frequently insufficient to prevent some softening or reticulation, while the formaldehyde tends to combine chemically with the developing agent so that the hardening properties fall off with age of the solution.

A semirapid procedure for processing negative sheet and roll films at 90° F. consists in adding 5% sodium sulfite to the developer and controlling fog, if necessary, by the addition of benzotriazole or 6-nitrobenzimidazole. After development for 1 minute, the film is immersed for 1 minute in a stop bath consisting of 5% chrome alum plus 5% sodium sulfate (anhydrous), then fixed for 2 minutes in the Kodak Liquid Fixer with Hardener (1:3), and finally washed for 2 minutes at 90° F.

Combined Development and Fixation

Although at first thought it would appear that a combined developing and fixing solution⁹ would be most suitable for rapid processing purposes by virtue of omission of one of the processing stages, little or no time is saved by the combined solutions since the concentration of the fixing constituents must be restricted so as to permit almost full development before fixation commences.

By incorporating formaldehyde in a pyrocatechol developer, however, it has been possible to process emulsions of medium speed satisfactorily at a temperature of 90° F. in from 15 to 30 seconds. Such baths have a tendency to give dichroic fog which could be offset by the addition of a little sodium cyanide, while with use, the baths accumulate a sludge of metallic silver and their exhaustion lives are relatively short.

For many years the Eastman Kodak Company has supplied Ophthalmographic Film for use in the Ophthalmograph, an instrument for recording the movement of the pupil of the eye while reading. As the film leaves the camera, it is pushed into a U-tube containing the combined developing and fixing solution consisting essentially of Kodak D-19 with the addition of sodium thiosulfate. After remaining for about 1 minute at room temperature, it is then passed through squeegee rollers and is ready for viewing, the entire operation taking place in daylight. Rapid processing methods are particularly advantageous for rendering such records immediately available.

Rapid Reversal Processing

The introduction of hardened emulsions has made possible the rapid production of positive images by reversal. For example, at modern race tracks, motion pictures are taken of a race from different viewpoints covering the entire track, and the judges may require the projection of the dry strip of positive image within a period of from 60 to 90 seconds after exposure. With the following procedure, Eastman Type 5275 with hardening (Super-X Blue Base Reversal Film) may be reversed to a positive in about 90 seconds:

| Stage of Process | Bath | Time (Sec.) | Temperature, ° F. |
|------------------|--|-------------|-------------------|
| 1st Developer | Kodak D-8 + 0.1 gram per liter 6-nitrobenzimidazole ntrate | 15 | 125 |
| Rinse | Water | 5 | 125 |
| Bleach | Kodak TC-1 (1:3) | 10 | 125 |
| Clear | Kodak CB-1 | 10 | 125 |
| Redevelop | Kodak FD-65 | 15 | 125 |
| Rinse | Water | 2 | 125 |
| Fix | Kodak Rapid Liquid Fixer with Hardener (1:2) | 10 | 125 |
| Wash | Water | 10 | 125 |
| Dry | Hot Air | 15 | 125 |

The bleach bath contains dichromate and sulfuric acid and the clearing bath, sodium sulfite, while the redeveloper contains hydrazine sulfate which permits redevelopment without exposure to light.

Rapid Processing of Paper Emulsions

The principles and factors which apply to the processing of films may, in general, be applied satisfactorily to

the processing of papers, although with the latter the problem is relatively simple because (a) many paper emulsions are hardened to such a degree in manufacture that they are not softened in boiling water, (b) the emulsions are relatively thin and fine-grained and, therefore, develop and fix faster than film emulsions, (c) the emulsions are relatively resistant to fog and will tolerate high temperatures in conventional developers, and (d) in the case of papers with waterproof base, such as Kodak Resisto, the rate of washing is relatively high. With ordinary papers, however, with non-waterproof base, washing is more difficult by virtue of adsorption of residual hypo to the paper fibers.

Rapid processing methods by hand manipulation of papers have been dealt with previously.¹ Within recent years, however, much attention has been given to the design of machines for the rapid processing of paper prints and a description of some of these may be of interest.

Figure 7 illustrates a machine designed by H. D. Russell for processing rolls of Aero Mapping Paper with waterproof support but it can also be used for processing paper emulsions such as Linagraph and Kodagraph, with regular base or even those with light-weight stock.

This experimental machine was constructed of wood, and waterproof paper stock was processed in it at the rate of 10 feet per minute at 90° F., the wash water being heated to 100° F. The developer employed was Kodak D-72 diluted 1:2, the fixing bath was the Kodak Rapid Liquid Fixer with Hardener, diluted 1:3.

Construction of the machine is shown schematically in Figure 8. The rollers at the bottom of the processing tanks are carried on a rack and are removed before the machine is threaded, which is accomplished by passing the paper across the upper rollers and then re-inserting the racks. The machine will process paper of any width up to 10 inches. The size of the developer and fixing tanks is 1-1/16 x 6 1/2 x 10 inches, which hold approximately 1 liter of solution.

The washing compartment was arranged so that the water entered the tank at the point where the paper leaves the tank and the rack carrying the guide rollers in the bottom of the tank was solid, thus forcing the water to travel in a narrow section around the tank and overflow at the point where the paper entered the tank. This resulted in very efficient washing with water at 100° F. using 1 gallon for each 5 feet of paper processed. The drying section consisted of four 250-watt 12-inch tubular lamps with a blower.

A machine designed by H. D. Russell and the author for the rapid processing of paper sheets is shown in Figure 9 and consists essentially of three adjacent shallow processing tanks, a pair of squeegee rollers, and a drier. The processing tank is shown in section in Figure 10. The paper (A) is fed into the shallow tank containing developer and rides on a series of endless chains at C, the rolls, R1 to R6, serving to keep the paper completely immersed. On leaving the tank, the paper is carried over roll R7, the excess developer being squeezed by roll R6. The paper then enters the fixing and washing tanks in a similar manner and is squeezed between rubber wringer rollers before entering the drier.

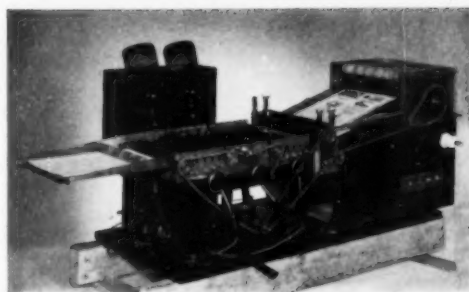


FIG. 9. Machine for the rapid processing of paper sheets.

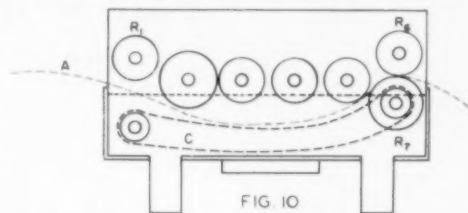


FIG. 10. Sectional view of developer tank in machine illustrated in Figure 9.

The temperature of the solutions is maintained by resistance heaters thermostatically controlled and the solutions are replenished by constant-level feeding bottles while a small volume of the used solution is allowed to flow constantly into the drain.

Data regarding processing solutions are as follows:

| Developer | Time and Temperature of Development | Fixing Bath | Time and Temperature of Fixing |
|------------------|-------------------------------------|--|--------------------------------|
| Kodak D-72 (1:2) | 10 sec. at 100° F. | Kodak Liquid Fixer with Hardener (1:3) | 10 sec. at 100° F. |

In a modified machine, wash water at 150° F. was applied by spraying in the third tank. In the drier, the paper is supported on a chain belt and first passes over a series of resistance heaters and then over a heated metal drum, while a fan provides circulation. Partial drying of the paper before passing over the drum is necessary to prevent embossing by the chain. Drying of Resisto paper was accomplished in 10 seconds. Papers with non-waterproof stock required longer times, depending upon the thickness.

Judging by the avidity with which the new rapid processing methods have been sought after by the photographic world, it may be predicted that their application to all branches of photography may ultimately be realized. Even in cases where urgency is of no importance, the economy effected by saving of space and quantity of machinery indicates a consideration of rapid processing methods.

References

1. Parker, H., and Crabtree, J. I.: Rapid Processing Methods, *Amer. Phot.* 30:67-78, February, and 142-150, March, 1936.
- Crabtree, J. I., and Russell, H. D.: Rapid Processing of Photographic Materials, *J. Phot. Soc. Amer.* 10:541, November, 1944.

2. Goldberg, E.: Anwendung der Fernschmethoden in der Photographischen Technik, *Kinotechnik* 14:401, 1932.
3. Schubert, Von G., Dillenburger, W., and Zschau, H.: Das Zwischenfilmverfahren, *Fernsch G.m.b.H.* 1:201, 1939.
4. Burkin, A. R.: Ultra-rapid Processing of Photographic Materials, *Phot. J.* 87B:108, September-October, 1947.
5. Tuttle, F. E., and Green, C. H.: Photographic Race Timing Equipment, *J. Soc. Mot. Pict. Eng.* 27:529, November, 1936.
6. Brown, F., Blackmer, L. L., and Kunz, C. J.: A System for Rapid Production of Photographic Records, *J. Frank. Inst.* 242: 203, September, 1946.
7. Crabtree, J. I., Eaton, G. T., and Muehler, L. E.: Fixing and Washing for Permanence, *J. Phot. Soc. Amer.* 9:115, March-April, 1943.
8. Miller, H. A., Crabtree, J. I., and Russell, H. D.: A Pre-hardening Bath for High Temperature Processing, *J. Phot. Soc. Amer.* 10: 397, September, 1944; 453, October, 1944.
9. Miller, H. A., and Crabtree, J. I.: Combined Developing and Fixing Solutions, *Amer. Phot.* 42:76, February, 1948.

Development by Resorcinol*

BY T. H. JAMES[†] AND G. I. P. LEVENSON[‡]

THE STATEMENT that resorcinol is devoid of developer activity commonly appears in the literature,¹ and resorcinol is often used as an example of a non-developer as predicted from the structural rules of Lumière, Andresen, and Kendall. (Exceptions to the structural rules are known, e.g., dihydroxymesitylene and trihydroxymesitylene.)¹ Abribat² observed some developer activity of a resorcinol solution to which potassium ferricyanide had been added, but he attributed the developer activity to an oxidation product of the resorcinol arising from the action of the ferricyanide. In a study, to be published elsewhere, of the accelerating action of certain dyes on development by a number of reducing agents, it was found by one of us (G.I.P.L.) that images could be developed in an alkaline resorcinol solution after bathing the sensitometer strips in solutions of dyes such as safranin-T and methylene blue. For example, in one experiment, a strong image was obtained by immersing the strip for 1 minute in methylene blue and then in a solution containing 11 g. of resorcinol and 23 g. of sodium hydroxide

per liter for 40 minutes at 20° C. No image was obtained without the dye prebath. This suggested the possibility that resorcinol itself, under sufficiently drastic conditions, might function as a developer. A series of experiments was undertaken to test this point.

A just visible image was obtained by immersing a strip of normal motion-picture positive emulsion in a solution of 11 g. of Eastman grade resorcinol and 28 g. of potassium hydroxide per liter for one hour, at which time the gelatin layer disintegrated. The solution was prepared and used in a virtually oxygen-free atmosphere. The experiment was repeated, using a formaldehyde-hardened emulsion. Good image development was obtained in 4 hours at 25° C. A control experiment, in which the emulsion was bathed in KOH solution alone, showed that the formaldehyde present in the emulsion did not produce a visible image during this time of treatment.

To test the possibility that an impurity was responsible for the developer activity, samples of Eastman white label resorcinol and Analar resorcinol were subjected to various purification procedures, and the purified samples tested for developer activity. In the Kodak Research Laboratories in Rochester, Eastman resorcinol was successively recrystallized from toluene (by E. C. Armstrong and A. Weissberger). Another sample was twice treated in sodium carbonate solution with precipitated silver chloride, extracted with ether, treated with decolorizing charcoal, then recrystallized four times from toluene. The results of developer activity tests are given in Table I.

A decrease in activity was noted in going from the original sample to that which had been recrystallized once, but further purification was without effect. In the Harrow laboratories, Analar resorcinol was purified as follows: 100 g. of resorcinol, 100 g. of sodium sulfite, and 15 g. of potassium hydroxide were dissolved in water, 10 ml. of 0.1M silver nitrate were added, and the solution was heated to 50° C. After cooling, the solution was made strongly acid with sulfuric acid, some boric acid was added to sequester any remaining catechol, and it was then extracted with ethyl acetate. The ethyl acetate extracts were washed several times with distilled water, and finally the resorcinol was recovered by distilling off the sulfur dioxide and ethyl acetate at about 30° under reduced pressure. The residue was recrystallized three times from sulfur-free toluene. A second sample was treated in the same manner as the first until the ethyl acetate had been distilled off. Then the apparatus was swept with nitrogen and some of the resorcinol distilled over. The apparatus was cooled, the receiver changed, and, after re-sweeping with nitrogen, the distillation was continued. A water-white sample was obtained, which had a melting point of 110°. A third sample was prepared by dissolving lead acetate in a melt of Analar resorcinol, which was then distilled as just described. A water-white sample was obtained, contaminated with a little acetic acid. These various methods of purification should effectively eliminate hydroquinone or catechol as an impurity in the resorcinol. All samples showed developer activity.

1. Cf. Mees, C. E. K., "The Theory of the Photographic Process," The Macmillan Co., New York, 1942, pp. 341-2.

2. Abribat, M., *Sci. ind. phot.*, 15, 204 (1944).

* Communication No. 1221H from the Kodak Research Laboratories.

[†] Eastman Kodak Company, Rochester, New York.

[‡] Kodak Limited, Watlington, Harrow, England.

TABLE I

Effect of Recrystallization of Resorcinol upon Its Developer Activity

Solution: Resorcinol 16.5 g., KOH 30 g., Temp. 30° C. Motion Picture Positive Film Exposed at Log E = 2.35. Total Volume of Solution, 1 Liter.

| Number of Recrystallizations from Toluene | Density in 30 Min. | Density in 60 Min. |
|---|--------------------|-----------------------|
| None | 0.42 | 1.39 |
| 1 | 0.27 | 1.05 |
| 2 | 0.26 | 1.07 |
| 3 | 0.28 | 1.07 |
| 4 (after AgCl treatment) | 0.27 | 1.08 |

The resorcinol developer yields a much higher fog and somewhat less emulsion speed than the conventional Elon-hydroquinone developer. A heavy yellow stain image accompanies the developed silver image. The addition of 25 g., per liter, of Analar sodium sulfite (hydrated) to the alkaline resorcinol developer reduced the developing activity greatly. After 1½ hours, the merest trace of an image had appeared on the formalin-hardened material. The film was completely fixed out in 2 hours.

The preceding experiments show that, under suitable conditions, resorcinol will develop a latent image in a normal silver bromide emulsion. The activity, however, is far less than that of either hydroquinone or catechol. What part traces of oxidation products not removed by the purification procedures might play in development by resorcinol cannot be determined at this point.

Sharpness of Photographs

By EDWARD K. KAPRELIAN †

THERE EXISTS a considerable discrepancy between the inherent resolving power of lenses and emulsions and the amount of apparent detail in the average negative. This discrepancy is not due to departure from recommended practice and exists frequently even when all the usual conditions for sharpness have been fulfilled and is explained by the fact that ordinarily no consideration is given either to the character and fineness of the important detail in the subject or to the size of these details as imaged in the emulsion.

For sharpness in a photographic negative, it is essential that the following well established conditions exist:

1. Objective must be well corrected.
2. Objective must be correctly focused.
3. Emulsion must be held in the plane of best imagery.
4. Relative motion of camera and subject must be absent during exposure.
5. Emulsion must have fine grain.
6. Exposure must be correct.
7. Processing must be in accordance with manufacturer's recommendations.

The photographic resolving power of a given objective-emulsion combination varies also with the aperture at which the objective is used (since energy distribution in the image varies with aperture), with the contrast of the detail in the subject and with the inherent contrast of the emulsion.

Most medium-to-high priced 24 x 36mm cameras used at stops between f/4 and f/11 are capable of resolving 25 to 35 lines per millimeter on fine grain film over substantially the entire negative area with subjects of average contrast. Accordingly, a sharp 24 x 36 mm negative enlarged 10 times yields a print having a resolution of 2½ to 3½ lines per millimeter—a reasonably sharp print when examined at the normal viewing distance of 10 inches. The experienced photographer presumably should realize this excellent performance with every exposure if he utilizes a tripod when indicated, exposes correctly,

processes the film as recommended, and otherwise fulfills all seven conditions above. Yet the experienced photographer seldom makes a 24 x 36mm negative capable of producing an 11" x 14" print which, at the normal viewing distance, is sharp to the eye and really full of detail.

The reason for this failure is that the joint effect of the two following additional factors is generally unrecognized:

1. Resolving power of the lens-emulsion combination.
2. Evaluation of the "significant detail" in the subject.

Factor 1 concerns the fact that with various emulsion types used in ordinary photography the average 1" to 8" focal length anastigmat of good quality, stopped down 2 stops from maximum aperture, produces negatives having sharpness of detail from about 10 lines/mm for longer focal length lenses and coarse grained emulsion to about 50 lines/mm for shorter focal length lenses and fine grain film.

Factor 2 concerns itself with the particular structure or character, in the subject, which is to be recorded. The significant detail—the thing or quality that is to be recorded reproducibly in the emulsion—may be body hairs, the grain pattern in a wooden plank, separate leaves and branches of a tree or the "countability" of individuals in a crowd. The significant detail in the subject may vary from 4 lines/mm for individual hairs to 1/75 line/mm for individual bricks in a wall to 1/1000 line/mm to permit counting the number of windows in a far-distant building.

The interrelation of these two factors is clear; it is essential, if full use is to be made of the ability of the lens and emulsion to resolve detail, that the significant detail in the subject be imaged in the emulsion at such a magnification—or reduction—ratio as to produce the maximum number of lines/mm which will be reproducibly recorded.

From simple optical approximations the image magnification relationship is stated as

$$\frac{U}{V} = \frac{h}{h'} \quad (1)$$

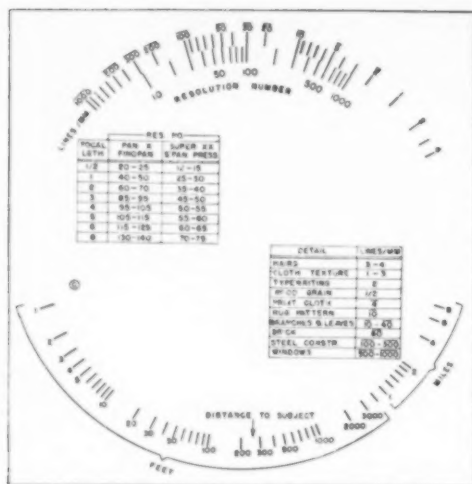
where U and V are the subject-to-lens and lens-to-image distances and h and h' are the subject and image heights respectively. If $\frac{1}{h'}$ is the significant detail existing in the object in lines per mm or lines per inch and $\frac{1}{h}$ is the corresponding detail existing in the image, then equation (1) becomes

$$U = \frac{\frac{1}{h'}}{\frac{1}{h}} V \quad (2)$$

where the term $\frac{1}{h'} V$ is the product, approximately, of the photographic resolving power and the focal length of the lens when utilizing conjugate ratios encountered in ordinary photographic arrangements. This product is termed here the "resolution number" with resolving power figures in lines/mm and the focal length in inches since these are the usual dimensions employed.

Resolution number, as used here, is a measurement of angular resolution and is compatible with values of ordinary resolving power which are taken as the separation in

† Signal Corps Engineering Laboratories, Fort Monmouth, N. J.



The outer scale of the calculator.

the object of lines separated by their own width multiplied by the distance from the object to the lens. Resolution numbers multiplied by 25.4 will yield resolving power.

Equation (2) states that the proper photographing distance equals the resolution number divided by the lines mm of significant detail in the subject. Thus, if 30 lines mm in the image is the standard of photographic resolving power with a given emulsion and a 2" lens, the resolution number for the particular lens-emulsion combination is 60. If the subject to be photographed with this combination is a fine patterned cloth having lines or patterns $\frac{1}{2}$ mm center to center, the proper photographing distance is $\frac{60}{2}$ inches or 2 1/2 feet. If the subject is a building with bricks 3" center to center constituting the significant detail to be resolved, then the proper photographing distance is 375 feet. If the brick wall is photographed at 750 feet with this combination, the resulting detail in the image—60 lines mm—is too fine to be resolved by the emulsion and the bricks are not separated, producing an unsharp appearing 10x print. If, on the other hand, the brick wall is photographed at 125 feet with the same lens and film, the resulting 10x print appears to lack sharpness because the 10 lines/mm in the negative have become only 1 line/mm in the print. In this same example the camera should be placed only 10 feet from the wall, if the texture of an individual brick (a different significant detail!) appearing as grooves and lines 2mm center to center in the brick, is to be recorded.

Professional photographers and advanced amateurs probably utilize this basic principle either unconsciously by considering the resolved detail as judged by the eye (resolution number 60-120), or consciously by examination of detail on the ground glass image, together with correct evaluation of the detail through long experience. This would appear to explain why wire frame finders, utilizing the resolving power of the eye, at unit magni-

fication, are naturally matched so well to larger cameras having 5 to 6 inch f.l. lenses with resolution numbers approximately equal to the eye, while with 24x36mm cameras the usual 0.5x inverted Galilean finder reduces the resolution number of the eye to again equal, approximately, that of the 2" lens normally used.

Obviously, instead of moving the camera toward and away from the subject, one may employ different lenses of various focal length. This is really the reason for the existence of interchangeable wide angle, normal view, and telephoto lenses—to produce the proper recordable detail in the image for a given subject distance and a given resolution number. With finer or coarser grained emulsions, and with the longer or shorter focal length lenses, different resolution numbers apply. The following Table I is intended only as an approximate guide in selecting the proper resolution number.

TABLE I

| Focal Length | Microfilm Emulsions | Fine Grain (Pan X, Finopan) | Medium Grain (Supreme, Plus X) | Coarse Grain Super XX Superpan Press |
|--------------|---------------------|-----------------------------|--------------------------------|--------------------------------------|
| 1/2" | 30-40 | 20-25 | 15-20 | 12-15 |
| 1" | 60-80 | 40-50 | 30-40 | 25-30 |
| 2" | 90-100 | 60-70 | 45-55 | 35-40 |
| 3" | 125-140 | 85-95 | 55-65 | 45-50 |
| 4" | 140-150 | 95-105 | 60-70 | 50-55 |
| 5" | 155-165 | 105-115 | 70-80 | 55-60 |
| 6" | 160-170 | 115-125 | 75-85 | 60-65 |
| 8" | 195-205 | 130-140 | 95-105 | 70-75 |
| 10" | 210-220 | 140-150 | 105-115 | 75-80 |
| 40" | | 400-500 | 350-400 | 250-300 |

These figures can be exceeded somewhat if the lens is low reflection coated and exceptionally well corrected, if the significant detail is particularly contrasty in nature and if more than ordinary care is taken to focus sharply and to avoid relative movement between the camera and subject during exposure. A dirty or damaged lens, or one of inherently poor correction, the use of some lenses at full aperture, buckling of the film, misalignment of optical axis, pronounced over- or under-exposure and pronounced over- or under-development are all factors which can reduce these figures.

Equation (2), being linear, lends itself readily for incorporation in a simple calculator since one term is the product of the other two. Several types of calculator have been made, the simplest of which carries typical subject matter classified according to significant detail and is shown in the figure. By setting the resolution number of the particular lens-emulsion combination opposite the appropriate value on the subject detail scale, the proper photographing distance is directly indicated on the lower scale. The calculator can be used with equal facility either to determine the required resolution number when the distance and the subject detail values are known or to determine the finest detail in the subject which can be reproducibly recorded with a given resolution number and distance.

In order to understand the value of the resolution number—significant detail—distance relationship in taking photographs, it should be borne in mind that a 4" x 5" negative is capable of producing a 30" x 40" print which is sharp to the eye at 10 inches and that each 8mm motion picture frame is capable of recording as much detail as is present in a frame of today's television.

Photometric Calibration of Lenses

BY M. G. TOWNSLEY *

THERE ARE eight factors which affect the density of a motion picture print ready to project on the screen, or the tone of a paper positive photographic print. In order for a photographer to obtain consistent results, it is essential that all eight of these factors be accurately controlled. In the order in which these factors appear in the chain of events which leads up to a finished positive, the factors are: emulsion speed, lighting, exposure time, lens transmission, negative processing, positive emulsion speed, printing, and print processing.

Photographers in general, and motion picture photographers in particular, have been working for many years to improve the precision with which each of these factors can be controlled in the making of a finished picture, until today, practically all components are under excellent control. Emulsion speeds are consistent from batch to batch because the film makers, starting with the work of Hurter and Driffield and progressing right down to the present day, have established close control in their emulsion making and film coatings. At the same time, the emulsion makers and the film manufacturers have worked out processing control and processing solutions so that emulsion speeds and emulsion contrast are readily maintained both in exposing and processing the original negative, and in positive printing or in reversal processing. In motion picture laboratories, printing exposure is very carefully and accurately controlled. The lighting on a set or of an outdoor scene is carefully measured by means of accurate exposure meters. The exposure time is controlled by accurate, modern shutters and particularly in motion picture cameras is known within one or two per cent.

All of this leaves only one factor which is not under precision control. This is the transmission of the lens used to take the picture. This transmission is determined by the iris diaphragm area and by the reflection and absorption losses in the lens itself. At first thought, it would seem that accurate knowledge of the area of the iris would provide precise control of the amount of light transmitted by the lens and it is on this assumption that the f stop system has been based. It is the purpose of this paper to point out that the reflection and absorption losses are not negligible, and to describe a new system known as the T stop system, which is being proposed for use in calibrating lens iris scales which takes these losses into account and compensates for them.

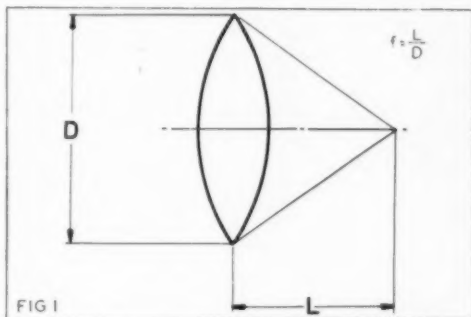
The f stop system is based on the physical diameter

of the entrance pupil and takes no account of the various losses which occur in a lens due to absorption, reflection, and scattering. By definition, the f stop is equal to the focal length of a lens divided by the diameter of its

entrance pupil. In Figure 1, $f_i = \frac{L}{D}$. It is easy to demonstrate that this leads to the possibility of having two lenses with the same marked f stops which will give an exposure ratio of two to one on the same scene. An uncoated lens has reflection losses equal to approximately 4% of the incident light for each air glass surface, so that it does not take very many elements in a lens to reduce the transmission to 50% or even lower. A coated element has a loss of 1% or a little less per surface so that it is quite easy to make a lens which transmits 90% or a little more of the entering light.

Over the past several years a number of proposals have been advanced seeking to eliminate or correct for the transmission losses in lenses and to arrive at a standard system of marking lenses so that the illumination on the film at a given stop will be independent of the construction of the lens.

Clark and Laube¹ selected one lens as a master standard and set up a photoelectric method of matching all other lenses to this master. This gave uniformity of all lenses in that one studio at any stop, but did not give accurate steps from stop to stop, and the standard was not reproducible. Others advanced proposals for measuring methods. Sachtleben² patented a physically sound method of measurement. Berlant³ proposed a reference standard based on transmission. Finally, Daily⁴ at Paramount Studios proposed a system based on comparison of the lens under calibration with the light transmitted from a collimated beam through an open hole in a sheet of metal, and proposed that the

FIG. 1. Representation of f stop.

* Delivered at Motion Picture Section, PSA 1948 Convention, November 5, 1948, Cincinnati, Ohio.

* Bell & Howell Company, Chicago, Illinois.

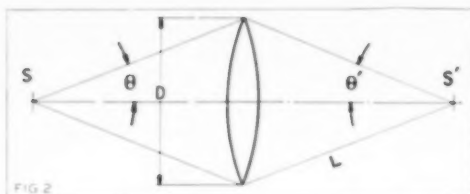


FIG. 2

lens opening number obtained in this way be called the T stop, with T standing for transmission. Daily also proposed that the same series of numbers which have always been used for f /stop be retained for T stops.

Daily's proposal had the tremendous advantage that it was reproducible anywhere. Any laboratory which could measure the focal length of a lens, the diameter of a hole, and the equality of two quantities of light, could calibrate lenses with the assurance that they would give correct steps from stop to stop, and would match lenses calibrated by the same system anywhere else in the world without the interchange of any standards whatever.

Later, Gardner⁵ revived Sachtleben's method and advanced a slightly different system of marking. It was finally shown both theoretically and by interchange of samples that Daily's method and Gardner's method gave identical results, and in the Society of Motion Picture Engineers Sub-Committee formed to study the problem, agreement was reached on the method of marking which Daily had proposed with both methods of measurement given as approved alternates. This standard proposal has been formulated as a final report of the SMPE Committee on Lens Calibration and is to be reviewed shortly by the Standards Committee of the SMPE.

In the meantime, the Bell & Howell Company⁶ had constructed a quite elaborate instrument based on Daily's method and had calibrated 10 sets of six lenses each for one of the major studios in Hollywood. It is believed that this was the first commercial sale of lenses calibrated in T stops.

The recent announcement of the Foton camera with T stop calibrated lenses is the first general sale of T stop lenses.

Many proposals were considered in the deliberations of the Committee which drafted the proposed standard. It was suggested from several quarters that, since a break was being made with tradition, it be made a total break, and a complete new series of numbers be assigned which would bear a simpler relation to the exposure than the inverse square relation of the f /stop system. This idea was discarded on the basis that the series of numbers used for f /stop is too familiar to abandon, that it exists on the scales of too many thousands of exposure meters, and that it has a certain usefulness in computing depth of field.

It was proposed that the T stop be made equal to the f /stop for a value of transmittance other than 100%. This would have had the advantage of requiring no change in using the Weston exposure meter, and presumably most of the others, although the data was not

readily available. This proposal too was discarded, first because no one value of the transmittance could be selected on other than an arbitrary basis, and, second, because as coating techniques are improved, the actual transmittance will approach more and more closely to 100%. The use of 100% as the standard value of the transmittance has the advantage that it is absolute. No matter how coating is improved, it can never raise the transmittance higher than 100%. The adoption of this value means that the job of standardization will not have to be done over again in 25 years when all lenses are coated and have transmittance over 90%. The final definition arrived at was as follows:

In order to embody the lens transmittance and the shape and size of the diaphragm into a single figure which can be engraved on the lens, it is proposed to adopt a new term to be known as the T number of a given lens at a given opening. This T number is to be defined as the f /number of an open circular hole or of a fictitious lens having 100% transmittance and a circular aperture which would give the same central image illumination as the actual lens at the specified stop opening (assuming a very distant object).

McRae,⁷ in a paper appearing in the April 1943 issue of the Journal of the Optical Society of America, derives the equation for the illumination of the image of a plane source from the geometry of Figure 2. To quote McRae:

If a plane source is imaged into an image plane by a lens or system of lenses, the illumination at the center of the image is given by

$$E' = \pi B (n'/n)^2 \sin^2 \theta' \quad (\text{eq. 1})$$

B = the brightness of the object plane

n' = the refractive index of the final image space

n = the refractive index of the object space

θ' = the slope angle of the most oblique ray which passes from the extreme edge of the lens to the axial image point.

Since in a camera lens we are dealing with both object and final image in air, the ratio $(n'/n)^2$ becomes unity and the equation simplifies to

$$E' = \pi B \sin^2 \theta' \quad (\text{eq. 2})$$

A comparison with Figure 1 will show that $f/ = \frac{1}{2 \sin \theta'}$. Quoting McRae again, we learn that the image illumination is dependent on only two variables:

First, the brightness of the source; second, the slope angle of the most oblique ray reaching the axial point. In particular, we note that nothing is said regarding the distance of the object or the magnification of the system. Three assumptions have been made, however, in deriving the equations. They are:

- 1) The source (object) emits light according to Lambert's law;
- 2) The lens system fulfills the sine condition, that is, it is free of coma;
- 3) The lens is perfectly transparent so that no light is lost by absorption or reflection.

In most cases, we may safely assume that no extensive departures from Lambert's law exist within the angles of interest, and long hours of labor on the part of the lens designer assures freedom from coma so that the second assumption that the lens fulfills the sine condition may be regarded as correct.

Assumption number 3, however, is never valid since actual lenses do cause considerable loss. It is necessary, therefore, to modify our fundamental equation to take this into account. If we denote the ratio of the light flux emerging from the lens or optical system to that incident upon it by the symbol K , we have as our basic equation

$$E' = K \pi B \sin^2 \theta' \quad (\text{eq. 3})$$

It is on this equation that the whole theory of lens calibration is based. This constant K is the transmittance of the lens. For a perfect lens, it is 100%, and the T stop system sets the lens iris so that it transmits as much light as it would if K were 100% for that lens.

The two methods for determining the T stops are the collimated beam method of Daily and the extended source method of Sachtleben and Gardner. In the collimated beam method (and we quote now from the Committee report):

Light from a small source (a 5mm hole covered with opal glass and strongly illuminated from behind) is collimated by a simple lens, or an achromat if preferred, of about 15 inches focal length and 2 inches aperture. This gives a collimated beam which will be focused by the test lens to form a small circle of light in its focal plane. This circle of light will be less than the prescribed limit of 3mm diameter for all lenses under 9 inches in focal length. Uniformity of the collimated beam can be checked by moving a small hole in an opaque screen across the beam, and any variations in the photocell reading noted.

For the comparison unit, an open aperture is used, of diameter equal to the focal length of the lens divided by the desired T number. This aperture is first mounted in front of an integrating sphere with the usual photocell detector, and the light from the collimator is allowed to enter the aperture. The aperture plate is now replaced by the lens, the iris diaphragm is closed down to give the same photocell reading, and the T stop number is engraved on the iris ring. The intermediate thirds of stops can be added by using 0.1 or 0.2 density filters as in the extended light source method.*

To guard against drift and line voltage variations which might occur between the readings on the comparison aperture and on the lens, it is convenient to leave the known standard aperture in place in front of the sphere, and to insert the lens into the beam in such a position that the little image of the source falls wholly within the standard aperture. The meter reading should then remain the same no matter whether the lens is in or out of the beam.

It should be noted particularly that if this method is used, the focal length of the lens must be separately measured, and a suitable set of open apertures constructed for use with it. However, by suitable devices, one single set of fixed apertures may be used for all lenses, as described by Townsley.

The corner-to-center ratio at any desired aperture can be conveniently determined by simply rotating the lens through the

* Author's note: Care must be exercised to take surface reflections from the filters into account, and to be sure that the density is measured in the way the filter will be used, that is, a diffusely measured density must not be used as a specular filter, or vice versa.

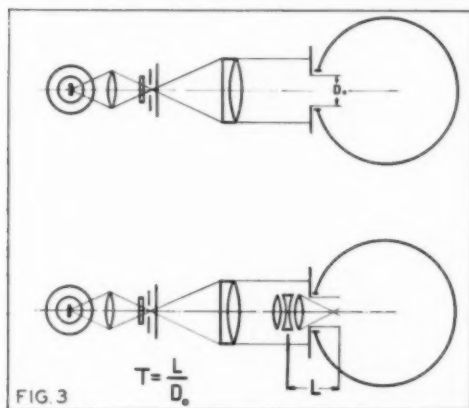


FIG. 3. T stops are determined by collimated beam method.

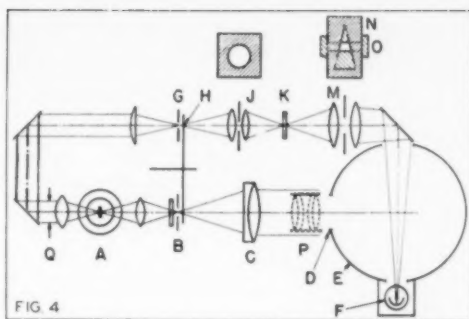


FIG. 4. Schematic arrangement of optical system.

desired field angle ϕ and comparing the photocell reading with its value for the lens axis. The light flux ratio can then be read off a calibration curve for the photocell system, and converted to the desired corner-to-center illumination ratio by multiplying it by $\cos^2 \phi$. (Note that this procedure will be correct only in the absence of distortion, but no motion picture lens is likely to have enough distortion to cause any significant error.)

Bell & Howell lenses are calibrated by an elaborate and precise instrument which employs the collimated beam method. Figure 4 shows the schematic arrangement of the optical system. A lamphouse (A) houses a 750 watt projection lamp whose filament is imaged in a small ($1/8$ " diameter) opening (B), which forms the source for a large collimating lens (C). An opening (D) in an integrating sphere faces this lens at a convenient distance. A holder is provided over this opening (D) into which slides, perforated with standard openings, may be inserted. Provision is made for mounting the lens (P) to be calibrated in front of the sphere opening so that all of the light leaving the lens is transmitted into the sphere. An electron multiplier photocell (F) is placed in the sphere wall at 90° to the window. This portion of the optical system is identical with the basic principles set forth by Daily.

From the rear face of the lamp filament, a second light beam is carried by mirrors and condensers to form a second filament image in the same plane as the collimator source image and approximately 6 inches away at (G). The fan motor which cools the projection lamp has its shaft horizontal and midway between these two images. A chopper wheel (H) is mounted on this shaft to interrupt both beams, and the apertures are phased so that the two beams alternate. The second beam is used as the comparison beam in a manner analogous to that used by Carpenter in the Baird nonrecording densitometer. A lens (J) images the source aperture on an opal glass (K). This lens is provided with a series of fixed circular stops increasing in $\sqrt{2}$ ratio in diameter, corresponding to the iris stops from T2 to T32. This lens and the stops serve as a stepped attenuator. A second lens (M) images the opal glass on the photocell, projecting its beam by means of a mirror directly across the sphere. The second lens has a wedge-shaped slit diaphragm (N) sliding across a fixed narrow slit (O) to give continuous attenuation of the light intensity. This slit is calibrated in terms of the equivalent focal lengths of the lenses to be tested. An iris



Fig. 5. Instrument with covers removed.

(Q) in the illuminating portion of the beam serves for initial balancing, and for rebalancing when lamps are changed.

The construction of the instrument in its present form with the covers removed from the comparison optical system is shown in Figure 5. The lamphouse is seen at the left end of the optical bench support, with the collimator lens between the lamphouse and the sphere. At the rear of the lamphouse are the condenser lenses, and the mirrors which furnish the light beam for the comparison track are mounted on the bench on the side away from the operator, with the lens having the circular stops closest to the lamphouse and the lens having the wedge attenuator closest to the sphere. The amplifier is placed where it can be reached for occasional adjustment of the gain control at extremely high or low light levels.

Figure 6 shows the instrument with a lens in place for direct photometric calibration and marking of its diaphragm ring. The lens is mounted in a separate holder in front of the sphere opening, and a flat steel table and a small scriber point are used to mark the iris points at the various T stops. In use, the focal length is set off on the wedge scale, the T stop is set into the first lens in the comparison beam, the lens to be calibrated is stopped down to bring the null indicator to balance, and the scriber is used to mark the point on the ring. This point is later picked up in the engraving machine and the permanent engraving done from the scribed line.

Original calibration of the instrument is made by means of a set of fixed, accurately made circular stops ranging in size from 0.0312 to 2 inches by steps having a ratio of 2 in area. These stops are placed in the holder over the sphere window, and the stops in the first lens in the comparison beam are matched to them, point for point, for at least two settings of the wedge diaphragm. The wedge diaphragm is then calibrated for equivalent focal length in the same manner, for at least four combinations of primary and secondary stops. Once the instrument has been calibrated in this way, it is necessary only to check one or two points occasionally to be sure that the calibration remains correct. The null-balance method eliminates the effects of electrical drift, and only movement of elements or dirt in the optical system can affect the calibration of the beam-attenuating system.

Measurements are made by inserting the lens to be tested in the collimated beam in front of the sphere window at (P). If the lens is being originally calibrated, the

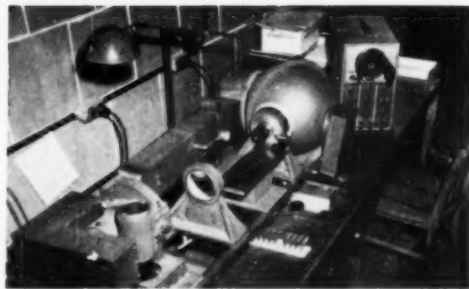


Fig. 6. Instrument with lens in place for calibration.

focal length is set off on the wedge aperture scale, and the desired T-stop value inserted in the comparison beam in the first lens (J), the iris of the lens being graduated is closed until the null point is reached, and the point is scribed on the iris ring. This procedure is repeated for each stop to be marked.

If the lens under measurement is being checked for correctness of existing engraving, the corresponding stop is inserted in the comparison beam, the iris is set to the mark, and a balance is secured by varying the wedge aperture. The corresponding equivalent focal length is read from the calibration curve for the wedge, and the T stop is computed from the relation

$$\text{true } T = \frac{\text{indicated } T \times \text{true } L}{\text{indicated } L}$$

The system of T stops proposed by Daily, requires an accurate knowledge of the equivalent focal length of the lens being calibrated. One convenient method of measuring the focal length is by means of a focal length collimator. This collimator consists of a well-corrected lens of long focal length having a ruled reticle in its focal plane. Rulings on this reticle subtend accurately known angles. The lens to be measured is set up facing the collimator, a microscope is focused on the image plane, and the lateral spacing between images of the rulings is measured. If the angle subtended by two rulings is θ , and the measured distance between their images is d , the equivalent focal length is found from the equation

$$L = \frac{d}{2 \tan \theta}$$

This method is identical in principle with the one shown by Daily, but is much more convenient and rapid if the collimator is available. The collimator method is given in detail by Hardy and Perrin.

Where large numbers of lenses are to be calibrated to commercial standards of accuracy, it is expected that the labor of measuring individual focal lengths can be avoided by using the group average focal length for the entire group providing the group does not show excessive scattering of the individual focal lengths about the average. It is usual experience for all lenses of a given design to group quite closely in focal length, even though the group average may be somewhat different from the nominal or design focal length. This is true even for batches of a given design manufactured at different times. The effect

is probably caused by failure of a designer to readjust the design when the focal length happens to differ slightly from the nominal figure after all of the aberrations have been corrected, and by slight further changes caused by fitting the design to existing curves in setting up the tooling for the lens. Once the tooling is fixed, there is little likelihood of the focal length shifting during manufacture except as it is slightly affected by tolerances in index, thickness, and spacing.

The permissible accuracy of the T stop governs the tolerance on the measurement of the equivalent focal length. Where production lenses run within a total tolerance of $\pm 2\%$, the batch average may safely be used as a basis for marking the T stops. The batch average may be as much as 8 to 10% above or below the nominal focal length. This will, in general, introduce an error too great to be tolerated into the T stop markings if the nominal focal length is used as the basis of calibration.

This point is covered here in some detail to emphasize the necessity for using at least the group average focal length and not using the nominal or marked focal length on which to base the calibration.

In the extended source method of lens calibration as developed by Gardner and Sachtleben and patented by Sachtleben, the source of Figure 2 is extended to a large plane which becomes the source both for the lens and for the comparison opening. In Figure 7 we see an extended, uniformly bright source (CD) and a circular aperture in a barrier (IJ), which admits light to illuminate the plane (GH). In (GH) is a small circular hole (O) through which light falls on a receiver (R). From the laws of illumination: If the area of the hole (O) is A and the brightness of the source (CD) is B, the luminous flux is given by the equation

$$F = BA \sin^2 \theta.$$

This angle θ is the same one which showed up in Figure 2 and, when we were discussing Figure 2, we showed that the f/stop was equal to $\frac{1}{2 \sin \theta}$. Suppose now that we set up the source and aperture arrangement of Figure 7 making the diameter of the opening in the barrier (IJ) such that it subtends the half angle θ corresponding to a desired T stop and measure the illumination falling through the opening (O). If we now remove barrier (IJ), replace it with a lens to be calibrated and stop down the iris diaphragm until the illumination through the opening (O) is identical with that when the opening in the barrier (IJ) was used, we will have set the lens in question to the T stop corresponding to the angle subtended by the opening in the barrier (IJ) and will have calibrated the lens for the corresponding T stop.

This apparatus is extremely simple and, if proper precautions are taken to insure uniformity of screen (CD) both as to brightness over its surface and illumination over a period of time, and stability in the receiver (R), it is possible to get perfectly accurate T stop calibrations. The final report of the SMPE Committee on Photometric Calibration gives the following Table I of diameters for apertures to be used at a distance of 50 mm in front of the opening (O).

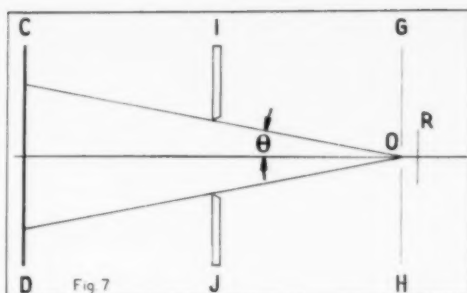


Fig. 7

It is essential in using this method that the lens being tested be set so that it focuses infinitely distant objects in the plane of the opening (O) but it is not necessary to know the equivalent focal length of the lens being tested.

We have covered the history leading up to the development of the T stop system, some of the reasons for adopting such a system, and the methods by which lenses may be calibrated. There remains only one further point for discussion, the method of application by the individual photographer.

We must answer the question, "How shall the photographer use the T stop system?" Briefly, he should use the T stop system just as he has always used the f/stop system with three important exceptions. First, he may use a T stop calibrated lens with confidence that the exposure will always be the same from lens to lens and that the step from one stop to the next will always double (or halve) the exposure. Second, when exposures are critical, the photographer should remember that a lens at a given T stop transmits more light than a lens at the same f/stop . This can be taken into account when using an exposure meter calibrated in f/stops by compensating for the fact that practically all exposure meters are designed to give correct exposures for a lens having a transmittance of 76%. Fortunately, it comes out that this transmittance difference between T stops and f/stops can be exactly compensated for by using the

TABLE I

| Desired T-number | Value of $\theta =$ $\cos^{-1} (2 \times T - \text{no})$ | Diameter of aperture $= 100 \tan \theta$ |
|---------------------|---|--|
| 0.5 | 60 degrees | infinity |
| 0.71 | 45 | 100 mm |
| 1.00 | 30 | 57.74 |
| 1.41 | 20.708 | 37.80 |
| 2.00 | 14.478 | 25.82 |
| 2.83 | 10.183 | 17.96 |
| 4.00 | 7.181 | 12.60 |
| 5.66 | 5.072 | 8.88 |
| 8.00 | 3.583 | 6.26 |
| 11.31 | 2.533 | 4.42 |
| 16.00 | 1.791 | 3.12 |
| 22.63 | 1.266 | 2.21 |
| 32.00 | 0.895 | 1.56 |

next higher film speed in the American Standards Association film speed series. For example, Kodachrome has a speed of 8; when used with a T stop lens, use a speed of 10. A film having a marked speed of 32 should be used as having a speed of 40, etc.

One feature of the T stop system which will bother the purchaser of lenses a little at first is the fact that lens manufacturers have always used the maximum aperture as a strong selling point. Thus, a 1" f/1.9 lens for a movie camera is portrayed as a much better (faster) lens than a lens having a maximum aperture of f/2. Because of the choice of 100% as a standard, for the T stop lenses, any lens at its maximum opening will have a T number larger than its f/ number. Thus, the 1" f/1.9 lens is likely to come out, if it is properly coated, to be T 2.1. This has not changed the lens at all, it has merely told the truth about the amount of light reaching the film. Looked at from the other side, the choice of 100% as the standard of transmittance means that at any given stop number, the lens calibrated in T stops will transmit more light than a lens at the same f/ stop. No one knows how much more because no one knows how much light the f/ stop lens is transmitting. For this reason, the purchaser should not attach too much importance to the apparently slower stop of the wide open lens when the lens is calibrated in T stops but should remember that the lens transmits from a sixth to a half a stop more light than a lens at the same f/ stop.

The only other place where the f/ number or T number enters the calculations of the average photographer is in the depth of field computations. Existing depth of field tables may be used without change, although using exist-

ing depth of field tables with a T stop lens has the effect of slightly increasing the diameter of the circle of confusion. If the depth of field is being calculated from one of the accurate depth of field equations, the compensation for T stops may be made by using a slightly smaller (85%) circle of confusion than would be used with geometrical f/ stops.

The T stop system then is the latest step in the long and enduring pursuit of precision in photography which began with the work of Hurter and Driffield on the sensitivity of photographic emulsion and has come down through the work of many individuals and many laboratories, improving step by step the accuracy of film speeds, exposure determination, emulsion processing and now, finally a system which gives us accurate knowledge of the brightness of the image formed on the film.

Bibliography

1. Laube, G., and Clark, D. B., "Lens Calibration," J.S.M.P.E., 36, 60 (1941); also U. S. Pat. 2,334,906 (Filed Sept. 1940, issued Nov. 1943).
2. Sachtleben, L. T., "Method of Calibrating Lenses," U. S. Pat. 2,419,421 (Filed May 1944, issued April 1947).
3. Berlant, E., "A System of Lens Stop Calibration," J.S.M.P.E., 46, 17 (1946).
4. Daily, C. R., "A Lens Calibrating System," J.S.M.P.E., 46, 343 (1946).
5. Gardner, I. C., "Compensation of Aperture Ratio Markings," J. Res. Bur. Stand., 38, 643 (1947); also J.S.M.P.E., 49, 96 (1947).
6. Townsley, M. G., "An Instrument for Photometric Calibration of Lens Iris Scales," J.S.M.P.E., 49, 111 (1947).
7. McRae, D. B., "Measurement of Transmission and Contrast in Optical Instruments," J.O.S.A., 33, No. 4, p. 229.
8. Washer, Francis E., "Errors in Calibration of the f number," J.S.M.P.E., 51, 242 (1948).

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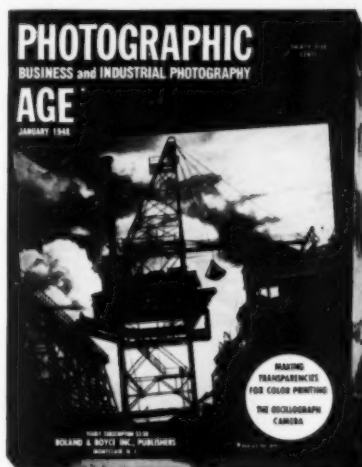
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